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**Department of Defense FY 2003 Budget Estimates  
February 2002**



**RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE  
Volume 4a - Other Defense Agencies**

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DEFENSE-WIDE  
FY 2003 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 0400D Research, Development, Test &amp; Eval, Defwide

Date: 21 FEB 2002

Line No --	Program Element Number -----	Item -----	Act ---	Thousands of Dollars			S E C -
				FY 2001 -----	FY 2002 -----	FY 2003 -----	
166	1160401BB	Special Operations Technology Development	7	9,997	20,506	6,741	U
167	1160402BB	Special Operations Advanced Technology Development	7	13,454	10,982	62,276	U
168	1160404BB	Special Operations Tactical Systems Development	7	159,645	255,604	281,443	U
169	1160405BB	Special Operations Intelligence Systems Development	7	6,968	14,989	1,590	U
170	1160407BB	SOF Medical Technology Development	7	1,996	4,017	1,962	U
171	1160408BB	SOF Operational Enhancements	7	77,822	86,209	77,308	U
		Operational Systems Development		----- 2,519,610	----- 3,167,404	----- 4,064,028	
		Total Research, Development, Test & Eval, Defwide		----- 11,315,775	----- 15,284,596	----- 16,613,551	

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## ***ORGANIZATIONS***

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AFSOC	Air Force Special Operations Command
NAVSPECWARCOM	Naval Special Warfare Command
TSOC	Theater Special Operations Command
USASOC	United States Army Special Operations Command
USSOCOM	United States Special Operations Command

## **ACRONYMS**

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ACTD	Advanced Concepts Technology Demonstration
ADRAC	Altitude Decompression Sickness Risk Assessment Computer
AGE	Arterial Gas Embolism
ALE	Automatic Link Establishment
ALGS	Autonomous Landing Guidance System
ALGL	Advanced Lightweight Grenade Launcher
ALLTV	All Light Level Television
AMP	Avionics Modernization Program
ASD	Assistant Secretary of Defense
ASDS	Advanced Sea, Air, Land Delivery System
ASE	Aircraft Survivability Equipment
ATD	Advanced Technology Demonstration
ATD/TB	AC-130U Gunship Aircrew Training Devices/Testbed
ATM	Asynchronous Transfer Mode
BALCS	Body Armor Load Carriage System
BOIP	Basis of Issue Plan
C2	Command and Control
C3I	Command, Control, Communications, and Intelligence
C4	Command, Control, Communications, and Computers
C4I	Command, Control, Communications, Computers, and Intelligence
C4IAS	Command, Control, Communications, Computers, and Intelligence Automation System
CAAP	Common Avionics Architecture for Penetration
CINC	Commander in Chief
COMSEC	Communications Security
COTS	Commercial-Off-The-Shelf
CPAF	Cost Plus Award Fee
DAMA	Demand Assured Multiple Access
DARPA	Defense Advanced Research Projects Agency
DCS	Decompression Sickness
DDS	Dry Deck Shelter
DIRCM	Directional Infrared Countermeasures
DMS	Defense Message System
EDM	Engineering Development Model

## **ACRONYMS**

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EFP	Explosively Forced Penetrator
EMD	Engineering and Manufacturing Development
ESA	Enhanced Situational Awareness
ETI	Evolutionary Technology Insertion
EW	Electronic Warfare
EWAISF	Electronic Warfare Avionics Integrated Systems Facility
FAA	Federal Aviation Administration
FCT	Foreign Comparative Testing
FOL	Family of Loud Speakers
GEO	Geological
GPS	Global Positioning System
HF	High Frequency
HLA	High Level Architecture
HMMWV	High Mobility Multi-purpose Wheeled Vehicle
HPFOTD	High Power Fiber Optic Towed Decoys
HRLMD	Hydrographic Reconnaissance Littoral Mapping Device
HSR	Heavy Sniper Rifle
ILM	Improved Limpet Mine
INOD	Improved Night/Day Observation/Fire Control Device
IR	Infrared
IRCM	Infrared Countermeasures
ISOCA	Improved Special Operations Communications Assemblage
JBS	Joint Base Station
JCS	Joint Chiefs of Staff
JDISS	Joint Deployable Intelligence Support System
JMPS	Joint Mission Planning System
JOS	Joint Operational Stocks
JTRS	Joint Tactical Radio System
JTWS	Joint Threat Warning System
LAN/WAN	Local Area Network/Wide Area Network
LASAR	Light Assault Attack Reconfigurable Simulator
LAW	Light Anti-Armored Weapons

## **ACRONYMS**

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LBJ	Low Band Jammer
LDS	Leaflet Delivery System
LEP	Lightweight Environmental Protection
LMG	Lightweight Machine Gun
LOS	Line of Sight
LPD	Low Probability of Detection
LPI	Low Probability of Intercept
LPI/D	Low Probability of Intercept/Detection
LPI/LPD	Low Probability of Intercept/Low Probably of Detection
LTI	Lightweight Thermal Imager
MAAWS	Multi-Purpose Anti-Armor/Anti-Personnel Weapons System
MATT	Multi-mission Advanced Tactical Terminal
MBITR	Multi-Band Inter/Intra Team Radio
MBMMR	Multi-Band/Multi-Mission Radio
MCADS	Maritime Craft Air Drop System
MELB	Mission Enhancement Little Bird
MICH	Modular Integrated Communications Helmet
MMB	Miniature Multiband Beacon
MPARE	Mission Planning, Analysis, Rehearsal and Execution
MPC	Media Production Center
NAVSCIATTS	Naval Small Craft Instructor and Technical Training School
NBC	Nuclear, Biological, and Chemical
NBOE	Non-Gasoline Burning Outboard Engine
NDI	Non-Developmental Item
NSSS	National Systems Support to SOF
NSW	Naval Special Warfare
NVD	Night Vision Devices
OMMS	Organizational Maintenance Manual Sets
ORD	Operational Requirements Document
OT&E	Operational Test and Evaluation
P3I	Pre-Planned Product Improvement
PAM	Penetration Augmented Munition
PC	Personal Computer
PC	Patrol Coastal

## **ACRONYMS**

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PFPS	Portable Flight Planning System
PGCB	Precision Guided Canister Bomb
PM	Program Manager
PM-MCD	Project Manager for Mines, Countermeasures and Demolitions
POBS	PSYOP Broadcasting System
PSYOP	Psychological Operations
RAA	Required Assets Available
RAMS	Remote Activated Munitions System
RIB	Rigid Inflatable Boat
SAHRV	Semi-Autonomous Hydrographic Reconnaissance Vehicle
SBIR	Small Business Innovative Research
SDS	Sniper Detection System
SDV	Sea, Air, Land (SEAL) Delivery Vehicle
SEAL	Sea, Air, Land
SIGINT	Signals Intelligence
SIRCM	Suite of Infrared Countermeasures
SLEP	Service Life Extension Program
SMRS	Special Mission Radio System
SO	Special Operations
SOC	Special Operations Craft
SOC	Special Operations Command
SOC-R	Special Operations Craft-Riverine
SOCRATES	Special Operations Command, Research, Analysis and Threat Evaluation System
SOF	Special Operations Forces
SOFDK	SOF Demolition Kit
SOFIV	SOF Intelligence Vehicle
SOFTACS	SOF Tactical Assured Connectivity System
SOFPARS	SOF Planning and Rehearsal System
SOLL	Special Operations Low Level
SOMROV	Special Operations Miniature Robotic Vehicle
SOMS-B	Special Operations Media Systems B
SOPMOD	SOF Peculiar Modification
SOPMODM-4	SOF Peculiar Modification-M4 Carbine

**ACRONYMS**

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SOST	Special Operations Special Technology
SOTD	Special Operations Technology Development
SOTVS	Special Operations Tactical Video System
SPEAR	SOF Personal Equipment Advanced Requirements
SRC	Systems Readiness Center
SRC	Special Reconnaissance Capabilities
STD	Swimmer Transport Device
SYDET	Sympathetic Detonator
TACLAN	Tactical Local Area Network
TDFD	Time Delay Firing Device
TEI	Technology Exploitation Initiative
TF/TA	Terrain Following/Terrain Avoidance
TRS	Tactical Radio System
UHF	Ultra High Frequency
UK	United Kingdom
US	United States
VHF	Very High Frequency
VSWMCM	Very Shallow Water Mine Countermeasures
VTC	Video Teleconferencing
WIRED	Wind Tunnel Integrated Real Time In the Cockpit/Real Time Out of the Cockpit Experiments and Demonstrations
WSADS	Wind Supported Air Delivery System



FEBRUARY 2002

## SPECIAL OPERATIONS COMMAND RDT&amp;E PROGRAM

Appropriation: 0400 Research Development Test & Evaluation Defense - WideTOA, \$ in Millions

<u>Program Element #</u>	<u>Item</u>	<u>Budget Activity</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
0304210BB	Special Reconnaissance Capabilitites (SRC)	7	3.765		
1160279BB	Small Business Innovative Research	7	5.160		
1160401BB	Spec Operations Technology Development	7	9.997	20.506	6.741
1160402BB	Spec Operations Advanced Technology Development	7	13.454	10.982	62.276
1160404BB	Spec Operations Tactical Systems Development	7	158.348	255.604	281.443
1160405BB	Spec Operations Intelligence Systems Development	7	6.968	14.989	1.590
1160407BB	SOF Medical Technology Development	7	1.996	4.017	1.962
1160408BB	SOF Operational Enhancements	7	77.822	86.209	77.308

**Total Operational Systems Development:****277.510****392.307****431.320****Total Special Operations Command:****277.510****392.307****431.320**

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE FEBRUARY 2002			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE PE1160401BB Spec Operations Technology Development						
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
PE1160401BB	9.997	20.506	6.741	7.378	8.488	8.725	8.991	Cont.	Cont.
S100 SO TECHNOLOGY BASE DEV	9.997	20.506	6.741	7.378	8.488	8.725	8.991	Cont.	Cont.

**A. Mission Description and Budget Item Justification**

This program element enables USSOCOM to conduct studies and develops laboratory prototypes for applied research and advanced technology development, as well as leverage other organizations' technology projects that may not otherwise be affordable within MFP-11. Applying small incremental amounts of investments to DOD, other government agencies, and commercial organizations allows the Commander-in-Chief, USSOCOM to influence the direction of technology development or the schedule against which it is being pursued, and to acquire emerging technology for Special Operations Forces. This program provides an investment strategy for USSOCOM to link non-systems technology opportunities to USSOCOM deficiencies, capability objectives, technology development objectives and mission area analyses.

Change Summary Explanation:

Funding:

--FY 2002 Congressional Actions:

- Dual Band Detector Imaging Technology (\$4.3 million)
- Lightweight Counter-Mortar Radar (\$3 million)
- SPIKE Urban Warfare System (\$4 million)
- Wireless Video Links for Special Operations Mobile Robotic Vehicle Technologies (\$1.6 million)

Schedule: None.

Technical: None.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2002	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE PE1160401BB Spec Operations Technology Development	
B. Program Change Summary	FY 2001	FY 2002	FY 2003
Previous President's Budget	9.957	7.606	8.241
Appropriated Value	10.260	20.506	
Adjustments to Appropriated Value / President's Budget	(.263)		(1.400)
Current Budget Submit	9.997	20.506	6.741

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development/Project S100								
COST (Dollars in Millions)			FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S100, Special Operations Forces Technology Base Development			9.997	20.506	6.741	7.378	8.488	8.725	8.991	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project conducts studies and develops laboratory prototypes for applied research and advanced technology development, as well as leverages other organizations' technology projects that may not otherwise be affordable within MFP-11. Applying small incremental amounts of investments to DoD, other government agencies, and commercial organizations allow the Commander-in-Chief USSOCOM to influence the direction of technology development or the schedule against which it is being pursued, and to acquire emerging technology for Special Operations Forces (SOF). This project provides an investment strategy for USSOCOM to link non-systems technology opportunities to USSOCOM deficiencies, capability objectives, and technology development objectives and mission area analyses. Sub-projects include:</p> <ul style="list-style-type: none"> <li>• Color Night Vision Fusion. Develop broad-spectrum sensors to include polarimetry and fuse these sensors while incorporating SOF size, weight, and human factor requirements.</li> <li>• Special Operators Mobile Robotic Vehicle Technologies. Focus tele-operated and tele-supervised (limited autonomy) systems.</li> <li>• SOF Clothing and Equipment. Peripheral sensor technologies to monitor status of an individual SOF operator and his equipment and to detect threats.</li> <li>• Man-Portable Counter Mortar System. Small portable radar for the SOF operator.</li> </ul>											

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development/Project S100	
<ul style="list-style-type: none"> <li>• PSYOP Extended-Range Broadcast. Technologies to increase the range of broadcasts from SOF assets.</li> <li>• Reconnaissance Technologies. Technologies providing the capability to identify, collect, store, transmit, exploit tactically significant information.</li> <li>• Cassandra. Fusion of Infrared, I2 and situational awareness information into a common heads up system for the individual operator.</li> <li>• Undersea Master Communications Node. Maritime communications device that transits across the air water boundary and within each medium.</li> <li>• Phrase Translation System. Hand held, tactical speech and language translator.</li> <li>• Restricted Line Of Sight (LOS) Personnel Locator. Communications techniques permitting communications through soil and into caves.</li> <li>• Wind Tunnel Integrated Real Time In the Cockpit/Real Time Out of the Cockpit Experiment and Demonstration (WIRED). Technologies to provide capability to interface SOF platforms communications and intelligence systems with new situational awareness transmissions.</li> <li>• Night Vision Windshield. Technologies permitting SOF pilots to weave visual sensor data into heads up display allowing the pilot to virtually see through the fuselage. Sensors are slaved to the head movements.</li> <li>• Special Threat Awareness Receiver. Advanced situational awareness receiver for SOF platforms.</li> <li>• Geological (GEO) Survey Kit. Technology to determine the California bearing ratio for surfaces to determine if safe for aircraft landing and use.</li> <li>• Accurate Tactical Navigation System. Navigation system for use in GPS denied areas.</li> </ul>		

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<ul style="list-style-type: none"> <li>• Tactical Display Technologies. Technologies enhancing the presentation of information to the SOF operator.</li> <li>• Universal Fuse. Single explosive, multi capability, initiating device.</li> <li>• Shoulder Fired Smart Round. Fire and forget rocket for man portable use.</li> <li>• Dual Band Detector Imaging Technology. Integrated multi-spectrum capable system.</li> </ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>• (2.576) SOF C4I Technologies. Completed development of FY00 sub-projects. Continued to exploit technologies that provide SOF with improved situational awareness and communications in all environments. Developed technologies to provide significant improvements to SOF's capability to accurately detect and track threats or targets. Developed C4I technologies to support mission accomplishment with reality manipulation techniques. Sub-projects included: completed laboratory demonstrations of networked software and interfacing to SOF radios for imagery forwarding, continued to develop and evaluate the use of polarimetry to enhance SOF night vision capabilities, continued effort to demonstrate a man portable counter mortar radars. Initiated efforts to: demonstrate extended range psychological operations broadcasts, develop and demonstrate equipment to support SOF reconnaissance missions, Cassandra, and enhanced situational awareness and command and control of SOF forces in high threat environments, develop a communications radio frequency and acoustic communications node in a maritime environment. (1QTR01-3QTR01)</li> <li>• (1.303) SOF Mobility Technologies. Completed development of FY00 sub-projects. Continued to exploit technologies to improve the performance and reduce the detection of SOF mobility assets. Continued to exploit and develop technologies to provide SOF the capability to conduct undetectable ground, air, and sea mobility operations in denied areas. Sub-projects included: continued efforts to demonstrate a radio frequency device to support location of personnel in non line of sight environment, continued the WIRED, continued active noise cancellation,</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development/Project S100	
<p>completed effort to demonstrate terrain following/threat avoidance radar for SOF aircraft, completed effort to demonstrate tactile sensors for enhanced situational awareness avoiding information overload on SOF aircrews. Initiated efforts to: provide SOF aircrews with improved unobstructed night vision, development of a threat awareness receiver for SOF aircraft. (1QTR01-3QTR01)</p> <ul style="list-style-type: none"> <li>• (1.155) SOF Weapons Technologies. Completed development of FY00 sub-projects. Continued to exploit technologies to provide SOF with standoff capabilities for targeting, tracking and locating personnel and equipment. Exploited technologies to discriminate targets and provide real-time active decision-making capabilities. Exploited technologies that enhance logistics, reduce cost and enhance performance of SOF weapons and munitions. Exploited technologies to reduce weapon overpressure in support of SOF missions. Sub-projects included: continued the development of a universal initiator for SOF munitions and weapons. Completed development and demonstration of wind sensing devices and development and demonstration of a 25mm anti-materiel round from a shoulder fired weapon. Initiated effort to demonstrate a shoulder launched fire and forget munition. (1QTR01-3QTR01)</li> <li>• (1.750) SOF Sustainment Technologies. Completed development of FY00 sub-projects. Continued to exploit technologies to increase SOF's survivability and performance. Continued to exploit technologies to improve the human sensory performance without interfering with normal sensory functions. Sub-projects included: Continued development of accurate tactical navigation system, the GEO survey kit and tactical display technologies. Completed SOF clothing, initiated phrase translation development. (1QTR01-3QTR01)</li> <li>• (0.200) Concept Exploration Studies. Explored/validated concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities. (2QTR01)</li> <li>• (0.199) Technology Development Exploitation. Exploited technologies to meet critical SOF capability objectives. Requirements in these areas may be advertised to industry and government research and development agencies via broad area announcements and calls for white papers. Initiated the phrase translation system. (3QTR01)</li> </ul>		

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<ul style="list-style-type: none"> <li>(2.814) Special Operators Mobile Robotics Vehicles. Focused on tele-operated and tele-supervised (limited autonomy) systems. (2QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>(2.305) SOF C4I Technologies. Complete development of FY01 sub-projects. Continue to exploit technologies that provide SOF with improved situational awareness and communications in all environments. Develop technologies to provide significant improvements to SOF's capability to accurately detect and track threats or targets. Exploit and demonstrate technologies that provide enhanced sensors and command and control. Continue the development of sub projects to include: the man-portable counter mortar system, development of polarimetry technology to enhance identification of hidden objects, psychological operations extended range broadcast system, the undersea master communications node, Cassandra, and reconnaissance technologies. Project planned for transition to Special Operations Special Technology: man portable mortar system. Planned C4I projects: initiate situational mission enhancements data for SOF, day/night/thermal video imaging device which explore in both the visual and infrared spectrum, higher resolution true color electro-optics integrated with more precise targeting and locating defensive countermeasures, and enhanced situational awareness technologies for SOF platforms while enroute and during prosecution of missions. (1QTR02-3QTR02)</li> <li>(1.026) SOF Mobility Technologies. Complete development of FY01 sub-projects. Continue to exploit technologies to improve the performance and survivability, and reduce the detectability of SOF mobility assets. Continue to exploit and develop technologies to provide SOF the capability to conduct ground, air, and sea mobility operations in denied areas. Continue to exploit and develop technologies to enhance logistics support, reduce cost and improve the performance of SOF mobility platforms. Projects include: continue active noise cancellation, WIRED, night vision windshield, special threat awareness receiver/transmitter. Planned mobility projects: initiate conformal load-bearing antenna structure/systems low probability of intercept/low probability of detection antennas for SOF combatant craft, aircraft camouflage paint/visual and infrared signature reduction, ultra- hi-intensity, eye safe long range illumination for Naval Special Warfare craft. Investigate autonomous high fidelity modeling and scaling of maritime platforms and initialize composite type technologies for SOF craft reliability and survivability properties. (1QTR02-3QTR02)</li> </ul>		

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<ul style="list-style-type: none"> <li>• (1.429) SOF Weapons Technologies. Complete development of FY01 sub-projects. Continue to exploit technologies to provide SOF with standoff capabilities for targeting, tracking and locating personnel and equipment. Exploit technologies to discriminate targets and provide real-time active decision-making capabilities. Exploit technologies that enhance logistics, reduce cost and enhance performance of SOF weapons and munitions. Exploit technologies to provide multipurpose, adaptable weapons applicable to SOF platform and missions. Projects include: continue the development of the shoulder fired smart round and the universal initiator. Planned project to be transitioned to SOST: universal initiator. Planned weapons projects: initiate enhanced M4 carbine technology prototypes and destructive countermeasures, which explore advanced munition technologies to improve indirect fire accuracy and lethality. (1QTR02-3QTR02)</li> <li>• (0.996) SOF Sustainment Technologies. Complete development of FY01 sub-projects. Continue to exploit technologies to increase SOF's survivability and performance. Continue to exploit technologies to improve the human sensory performance without interfering with normal sensory functions. Projects include: continue the development of the GEO survey kit, accurate tactical navigation, phrase translation system, and tactical display technologies. Planned projects: special tactics rappel/fast rope system. (1QTR02-3QTR02)</li> <li>• (0.750) Concept Exploration Studies. Explore/validate concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities. (2QTR02)</li> <li>• (0.300) Technology Development Exploitation. Exploit technologies to meet critical SOF capability objectives. Requirements in these areas may be advertised to industry and government research and development agencies via broad area announcements and calls for white papers. (3QTR02)</li> <li>• (0.800) Details of this project are provided under separate cover. (1QTR02-2QTR02)</li> <li>• (4.300) Dual Band Imaging Technologies. Develop manufacturing processes of novel optically coated lens assemblies and systems, demonstrated via custom prototypes, necessary to begin producing night vision systems in order to provide the warfighter with unprecedented night time advantage. (2QTR02-4QTR02)</li> </ul>		

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<ul style="list-style-type: none"> <li>• (3.000) Lightweight Counter-Mortar Radar System. Continue the reduction in size, weight and power requirements of the current prototype, and enhance the detection algorithms of the system. (2QTR02-4QTR02)</li> <li>• (4.000) SPIKE Urban Warfare System. Continue to develop enhancements to shoulder fired guided missiles, and refine the guidance system for more accurate prosecution of hardened targets while reducing collateral damage. (2QTR02-4QTR02)</li> <li>• (1.600) Wireless Video Links for SOMROV. Develop high data rate video links between various unmanned systems. These systems will be evaluated during Millennium Challenge 2002 (MC02) and Olympic Challenge 2004. (2QTR02-4QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>• (1.401) SOF Command, Control, Communications, Computers, and Intelligence (C4I) Technologies. Complete development of FY02 sub-projects. Continue to exploit technologies that provide SOF with improved situational awareness and communications in all environments. Develop technologies to provide significant improvements to SOF's capability to accurately detect and track threats or targets. Exploit and demonstrate technologies that provide enhanced sensors and command and control. Projects include: continue the development of the man-portable counter mortar system, Cassandra, the undersea master communications node, polarimetry and the psychological operations extended range system. (1QTR03-3QTR03)</li> <li>• (1.349) SOF Mobility Technologies. Complete development of FY02 sub-projects. Continue to exploit technologies to improve the performance and survivability, and reduce the detectability of SOF mobility assets. Continue to exploit and develop technologies to provide SOF the capability to conduct ground, air, and sea mobility operations in denied areas. Continue to exploit and develop technologies to enhance logistics support, reduce cost and improve the performance of SOF mobility platforms. Projects include: continue the development of WIRED, night vision windshield and the special threat awareness receiver/transmitter. (1QTR03-3QTR03)</li> </ul>		

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<ul style="list-style-type: none"> <li>• (1.399) SOF Weapons Technologies. Complete development of FY02 sub-projects. Continue to exploit technologies to provide SOF with standoff capabilities for targeting, tracking and locating personnel and equipment. Exploit technologies to discriminate targets and provide real-time active decision-making capabilities. Exploit technologies that enhance logistics, reduce cost and enhance performance of SOF weapons and munitions. Exploit technologies to provide multipurpose, adaptable weapons applicable to SOF platform and missions. Projects include: continue the development of the shoulder fired smart round and the universal initiator. (1QTR03-3QTR03)</li> <li>• (0.992) SOF Sustainment Technologies. Complete development of FY01 sub-projects. Continue to exploit technologies to increase SOF's survivability and performance. Continue to exploit technologies to improve the human sensory performance without interfering with normal sensory functions. Projects include: continue the phrase translation system and complete and transition the accurate tactical navigation system, and the GEO survey kit to SOST. (1QTR03-3QTR03)</li> <li>• (0.600) Concept Exploration Studies. Explore/validate concepts for projects being continued or initiated in support of the USSOCOM desired operational capabilities. (2QTR03)</li> <li>• (0.300) Technology Development Exploitation. Exploit technologies to meet critical SOF capability objectives. Requirements in these areas may be advertised to industry and government research and development agencies via broad area announcements and calls for white papers. (3QTR03)</li> <li>• (0.700) Details of this project are provided under separate cover. (1QTR03-2QTR03)</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160401BB Special Operations Technology Development/Project S100	
<p>B. <u>Other Program Funding Summary</u>: None.</p> <p>C. <u>Acquisition Strategy</u>: None.</p> <p>D. <u>Schedule Profile</u>: None.</p>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE FEBRUARY 2002			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7				R-1 ITEM NOMENCLATURE PE1160402BB Spec Operations Advanced Technology Development					
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
PE1160402BB	13.454	10.982	62.276	62.593	42.023	18.322	14.539	Cont.	Cont.
S200 SPECIAL OPERATIONS SPECIAL TECHNOLOGY	13.454	10.982	62.276	62.593	42.023	18.322	14.539	Cont.	Cont.
<p><b>A. Mission Description and Budget Item Justification</b></p> <p>This program element conducts rapid prototyping and advanced technology demonstrations. It provides a means for demonstrating and evaluating emerging/advanced technologies in as realistic an operational environment as possible by Special Operations Forces users. Evaluation results are included in a transition package which assists in the initiation of or insertion into an acquisition program. The program element also addresses projects that are a result of unique joint, special mission, or area-specific needs for which a few-of-a-kind prototypes must be developed on a rapid response basis, or are of sufficient time sensitivity to accelerate the prototyping effort of a normal acquisition program in any phase.</p> <p>Change Summary Explanation:</p> <p>Funding:</p> <p>--This program element received \$3 million of FY 2002 Defense Emergency Response Funds for an Unmanned Aerial Vehicle.</p> <p>--FY 2002 Congressional Actions:</p> <p style="padding-left: 20px;">SOF Aircraft Defensive Systems (\$2 million)</p> <p style="padding-left: 20px;">Electronic Digital Compass System (\$1.4 million)</p> <p>Schedule: None.</p> <p>Technical: None.</p>									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2002	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE PE1160402BB Spec Operations Advanced Technology Development		
B. Program Change Summary	FY 2001	FY 2002	FY 2003
Previous President's Budget	13.615	7.582	8.276
Appropriated Value	14.028	10.982	
Adjustments to Appropriated Value / President's Budget	(.574)		54.000
Current Budget Submit	13.454	10.982	62.276

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE  FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200								
COST (Dollars in Millions)		FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S200, Special Operations Special Technology		13.454	10.982	62.276	62.593	42.023	18.322	14.539	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project conducts rapid prototyping and Advanced Technology Demonstrations (ATDs). It provides a means for demonstrating and evaluating the utility of emerging/advanced technologies in as realistic an operational environment as possible by Special Operations Forces (SOF) users. This project integrates efforts with each other and conducts technology demonstrations in conjunction with joint experiments and other assessment events. Evaluation results are included in a transition package, which assists in the initiation of or insertion into an acquisition program. The project also addresses sub-projects that are a result of unique joint, special mission, or area-specific needs for which a few-of-a-kind prototypes must be developed on a rapid response basis, or are of sufficient time sensitivity to accelerate the prototyping effort of a normal acquisition program in any phase. Sub-projects include:

- Advanced Sensors. ATD to provide SOF with an integrated hand-held, multi-sensor reconnaissance capability to observe, locate, and report on targets.
- Advanced Sniper Weapon Fire Control. Full wind vector ballistic solution at extended range (1200 meters).
- Antenna Enhancement. High bandwidth receiver/transmitter conformal antennas for SOF platforms.
- Battery Recharging System. Technologies providing SOF operators capability to recharge batteries or reduce number of batteries required with portable lightweight recharging systems.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<ul style="list-style-type: none"><li>• Burst Comms and Low Probability of Detection (LPD) Antenna. LPD antenna system for maritime platforms permitting multiband Low Probability of Intercept/Detection (LPI/D) communications.</li><li>• Integrated Bridge System. A system that enhances maritime craft bridge-console and operator interface through human factor engineering and integration with console design and displays.</li><li>• Intrusion Sensor. A miniature, multi-sensor system to detect local threats.</li><li>• LPI/D Imagery Forwarding. Demonstrate a short range, self-forming, self-queuing, high data rate, networked communications link for SOF applications.</li><li>• Night Vision Electro-Optic Enhancements. Enhance night vision capability in lightweight systems.</li><li>• Remote Miniature Weather Station. Man-portable, airdrop capable weather sensors with a transmission system for terrestrial based unattended weather collection operations.</li><li>• Penetrating Aircraft Terrain Following/Terrain Avoidance (TF/TA). LPI/D radar technology for SOF penetrating platforms.</li><li>• SEAL Delivery Vehicle (SDV) Airdrop. Assess and develop the capability to airdrop an SDV.</li><li>• Signals Intelligence (SIGINT). Identification of advanced SIGINT technologies for use in the Joint Threat Warning Systems (JTWS).</li><li>• SOF Enhanced Weapons. Weapons and munitions prototypes for increased range, improved accuracy, and improved performance against hardened targets.</li></ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<ul style="list-style-type: none"><li>• SOF Robotics. Leverage air, ground, and maritime robotics technology for SOF evaluations to determine operational utility.</li><li>• Tactical Personal Computer. Demonstrate advanced wearable computer technology for SOF special reconnaissance and combat control team applications.</li><li>• Underwater Adhesives. Demonstrate advanced adhesive technologies for emplacing underwater demolitions.</li><li>• SOF Combatant Craft. Fabricate and test a high speed, variable freeboard for the insertion and extraction of SOF.</li><li>• Littoral Warfare Craft. Demonstrate a high speed, medium range watercraft that submerges on target, which can perform insertion/extraction missions.</li><li>• Vehicle Camouflage System. Easy on/off camouflage system for SOF vehicles providing mission ready advanced camouflage.</li><li>• Aircraft Experimentation (AC-X). Develop and explore the emerging technologies for the next generation of the AC-130 gunship.</li><li>• SOF Aircraft Defense Systems. Upgrade APR-46 system and replace analog circuits and digital circuits with new cardset.</li><li>• Electronic Digital Compass System. Develop an electronic digital compass system.</li></ul> <p>FY 2001 ACCOMPLISHMENTS:</p>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<ul style="list-style-type: none"> <li>• (1.871) SOF Command, Control, Communications, Computers, and Intelligence (C4I) ATDs. Completed development and evaluation of FY00 sub-projects. Continued to exploit emerging technologies to conduct ATDs that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishments, and reduce an adversary's ability to use information. Exploited emerging technology to conduct ATDs that provide SOF with increased sensory performance. Exploited emerging technologies to locate and track targets or items of interest. Sub-projects included: continued night vision enhancements, LPI/D imagery link/forwarding, tactical personal computer, SIGINT technologies, communications suite for robotics and other tactical uses, acoustic sensors and intelligence systems, and the remote weather station. Initiated projects for conformal antennas, burst communications from platforms and other tactical communications. (1QTR01-3QTR01).</li> <li>• (2.190) SOF Mobility ATDs. Completed development and evaluation of FY00 sub-projects. Continued to exploit emerging technologies to conduct ATDs that provide SOF with survivable mobility operations in high threat areas and with enhanced situational awareness. Exploited emerging technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploited emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploited technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Sub-projects included: completed penetrating aircraft TF/TA, continued systems and mobility enhancements for robotic platforms. Initiated projects for a SDV airdrop system, SDV periscope, and vehicle camouflage system. (2QTR01-3QTR01).</li> <li>• (1.063) SOF Weapons ATDs. Completed development and evaluation of FY00 sub-projects. Continued to exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy. Sub-projects included: continued active denial technologies, completed advanced wind sensors for sniper weapons, SOF enhanced weapons. Initiated projects for a 25mm SOF payload rifle. (2QTR01-3QTR01).</li> <li>• (1.160) SOF Sustainment ATDs. Continued development and evaluation of FY00 sub-projects. Continued to exploit emerging technologies to conduct ATDs that provide SOF with increased survivability and performance. Sub-projects included: continue Naval Special Warfare (NSW) equipment waterproofing, the intrusion sensor system and the battery recharging system. (1QTR01-3QTR01).</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<ul style="list-style-type: none"> <li>• (0.329) Technology Exploitation Initiative (TEI). Exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. (3QTR01).</li> <li>• (0.729) Littoral Warfare Craft. Exploited established technology to demonstrate craft as a conceptual, multi-mission platform. Explored a variety of mission modules and equipment. (2QTR01-3QTR01)</li> <li>• (5.337) SOF Combatant Craft. Fabricated and tested a semi-submersible, high speed, low signature demonstrator vessel intended for short to medium range insertion/extraction missions. (2QTR01-3QTR01)</li> <li>• (0.775) Details of this project are provided under separate cover. (1QRT02-2QTR02)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (2.063) SOF C4I ATDs. Complete development and evaluation of FY01 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Exploit emerging technology to conduct ATDs that provide SOF with increased sensory performance. Exploit emerging technologies to locate and track targets or items of interest. Sub-projects include: continue the development of the antenna enhancements, LPI/D imagery forwarding, communications for robotics, burst communications and low probability of detection antenna, and tactical communication/computers technologies projects. Planned projects that will be completed are LPI/D imagery link and tactical personal computer. Planned C4I project starts include: special tactics man-portable integrated global broadcasting system/joint broadcasting system. (1QTR02-3QTR02).</li> <li>• (2.431) SOF Mobility ATDs. Complete development and evaluation of FY01 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with survivable mobility operations in high threat areas and with enhanced situational awareness. Exploit emerging</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<p>technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms. Sub-projects include: continue the development of robotics SDV delivery vehicle airdrop, transition of penetrating aircraft TF/TA technologies, vehicle camouflage system and a low observable periscope for maritime platforms. Planned mobility projects: tactical system specific emitter identification technology insertion and portable cradle for the NSW Rigid Inflatable Boat. (2QTR02-3QTR02).</p> <ul style="list-style-type: none"> <li>• (0.696) SOF Weapons ATDs. Complete development and evaluation of FY01 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy. Demonstrate capabilities of smart munitions and fire and forget capability. Exploit technologies to increase standoff from threat weapons systems. Decrease cost and logistic support requirements for SOF weapons systems. Sub-projects include: the development of infrared search track technologies and enhanced M203 munitions. Planned projects that will be completed are the advanced sniper weapon fire control system and active denial technology. Planned weapons projects: remote standoff capable/remote operations small arms mount, day/night sniper scope and joint SOF demolitions kit upgrade. (1QTR02-3QTR02)</li> <li>• (1.292) SOF Sustainment ATDs. Continue development and evaluation of FY01 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with increased survivability and performance. Sub-projects include: continue the development of intrusion sensor system, equipment waterproofing technologies, underwater adhesive technologies and battery recharging. Planned project that will be completed is battery-recharging system. Planned sustainment projects: develop camouflage schemes through paint patterns and coatings for SOF personnel and equipment, prototype advanced navigation system for military free-fall operations utilizing global positioning system and inertial navigation technologies, and develop advanced learning technologies that use web-based, decision-aided tools. (1QTR02-3QTR02)</li> <li>• (0.500) TEI. Exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. (3QTR02)</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<ul style="list-style-type: none"> <li>• (0.600) Details of this project are provided under separate cover. (1QRT02-2QTR02)</li> <li>• (2.000) SOF Aircraft Defense Systems. Develop an upgrade for the APR-46 microwave receiver which provides long-range threat detection for the MC-130E/H and AC-130H/U aircraft, to include non-recurring engineering.</li> <li>• (1.400) Electronic Digital Compass System. Develop an electronic digital compass system</li> </ul> <p>DERF PLAN:</p> <ul style="list-style-type: none"> <li>• (3.000) Unmanned Aerial Vehicle (UAV). Develop a small UAV that will provide intelligence gathering and dissemination capabilities for urban and complex terrain environments. (1QTR02-4QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>• (1.082) SOF C4I ATDs. Complete development and evaluation of FY02 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with a robust C4I capability to ensure uninterrupted information exchange, influence situations to support mission accomplishment, and reduce an adversary's ability to use information. Exploit emerging technology to conduct ATDs that provide SOF with increased sensory performance. Exploit emerging technologies to locate and track targets or items of interest. Sub-projects include: continue the development of the antenna enhancements, LPI/D imagery forwarding, communications for robotics, burst communications and LPD antenna and tactical communication/computers technologies projects. (1QTR03-3QTR03)</li> <li>• (1.649) SOF Mobility ATDs. Complete development and evaluation of FY01 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with survivable mobility operations in high threat areas and with enhanced situational awareness. Exploit emerging</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<p>technologies to conduct ATDs that provide SOF mobility assets with a reduction in logistic support requirements. Exploit emerging technologies to rapidly deploy and extract SOF personnel and craft. Exploit technologies to allow reconnaissance and conduct direct action in high threat areas using unmanned systems. Exploit technologies to reduce cost or enhance the performance of existing SOF platforms. Sub-projects include: continue the tactical personal computer, SDV airdrop and periscope, robotics and complete vehicle camouflage system. (2QTR03-3QTR03)</p> <ul style="list-style-type: none"> <li>• (1.766) SOF Weapons ATDs. Complete development and evaluation of FY01 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with multi-role/multi-purpose weapons and demolitions with a broader range of potential effects and increased accuracy. Demonstrate capabilities of smart munitions and fire and forget capability. Exploit technologies to increase standoff from threat weapons systems. Decrease cost and logistic support requirements for SOF weapons systems Sub-projects include: continue the universal initiator and the anti-material payload rifle. (1QTR03-3QTR03)</li> <li>• (1.179) SOF Sustainment ATDs. Continue development and evaluation of FY01 sub-projects. Continue to exploit emerging technologies to conduct ATDs that provide SOF with increased survivability and performance. Sub-projects includes: complete the intrusion sensor system, transition equipment waterproofing technologies, projects started in FY02, underwater adhesive technologies and alternative power sources technologies. (1QTR03-3QTR03)</li> <li>• (0.500) TEL. Exploit emerging technology to meet critical SOF requirements and encourage industry and government lab participation in identifying enhancements to SOF in critical areas. (3QTR03)</li> <li>• (0.600) Details of this project are provided under separate cover. (1QRT03-2QTR03)</li> <li>• (55.500) AC-X Gunship Advanced Concept Technology Demonstration (ACTD). This effort will initiate an Advanced Tactical Laser ACTD. The overall intent is to understand the military need, provide preliminary concepts of operation for a directed energy weapon on the battlefield to support</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<p>the warfighter, and assess the military utility based on the ACTD demonstration. These steps will be accomplished by developing and employing a modular, high-energy laser weapon system, capable of conducting ultra-precision strike missions to enhance mission accomplishment of the warfighter.</p> <p>The steps toward demonstrating the utility of a high-energy laser weapon are:</p> <ol style="list-style-type: none"> <li>a. Demonstrate a modular, high-energy laser weapon to conduct ultra-precision strike missions for the warfighter. <ol style="list-style-type: none"> <li>(1) Demonstrate weaponization of the sealed exhaust, Chemical Oxygen Iodine Laser (COIL) in a modular system, capable of deployment on a C-130.</li> <li>(2) Demonstrate ability to acquire and engage tactical targets in an air-to-ground system test.</li> <li>(3) At the completion of the ACTD, leave behind one fully-operational laser system consisting of the laser and beam director, surveillance and acquisition sensors sufficient to support employment of the laser system, software, an operator workstation and portable ground support equipment. The system will include documentation required to operate and maintain the ATL system.</li> </ol> </li> <li>b. The ATL ACTD is a jointly sponsored effort to demonstrate technology concepts to satisfy the critical mission needs for an ultra-precision strike capability. The demonstration phase for the ACTD will utilize joint/service exercises to the fullest extent possible, focusing on matching the objectives of the ACTD with objectives of the desired exercises and demonstrations. Demonstration of laser utility for both lethal and non-lethal purposes will be provided. To the maximum extent possible, considerations for a logistically supportable system will be integrated in the system design and development.</li> </ol> <p>Management of this ACTD will be monitored by the Overarching Integrated Product Team (OIPT). The OIPT will be chaired by the Deputy Under Secretary of Defense for Advanced Systems and Concepts, DUSD(AS&amp;C). Other members to the OIPT include the Acquisition Executive, USSOCOM; Commander, Air Force Special Operations Command (AFSOC); and Deputy Commandant for Plans, Policy and Operations, U.S. Marine Corps, in the role of the DoD Executive Agent for non-lethal weapons.</p> <p>USSOCOM is the CINC User Sponsor. USSOCOM has delegated the Operational Manager role to AFSOC. AFSOC is responsible for developing the Concept of Operations (CONOPS), providing the overall utility assessment, and leading the lethal assessment for the ATL ACTD.</p>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160402BB Special Operations Advanced Technology Development/Project S200	
<p>The Joint Non-Lethal Weapons Directorate (JNLWD) will facilitate participation of DoD non-lethal weapons expertise and support the AFSOC's utility assessment for non-lethal target effects.</p> <p>USSOCOM is the Lead Service and will provide the Technical Manager. Overall technical management will be administered by a Program Integrated Product Team (PIPT). The PIPT will be led by USSOCOM and supported by the U.S. Air Force Research Laboratory and the U.S. Army Space and Missile Defense Command.</p> <p>USSOCOM is the Transition Manager.</p> <p>The U.S. Marine Corps will evaluate the ATL for applicability to the MV-22 on a non-interference basis.</p> <p>The U.S. Army will evaluate the ATL for applicability to the Army Objective Force on a non-interference basis.</p> <p>The ACTD was approved for a FY01 start. The program will culminate in a Military Utility Assessment in FY06. Based on the results of the utility assessment, the ACTD could transition into an acquisition program.</p> <p>B. <u>Other Program Funding Summary</u>: None.</p> <p>C. <u>Acquisition Strategy</u>: None.</p> <p>D. <u>Schedule Profile</u>: None.</p>		



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)					DATE FEBRUARY 2002				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE PE1160404BB Spec Operations Tactical Systems Development							
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
PE1160404BB	158.348	255.604	281.443	205.697	156.531	104.241	97.319	Cont.	Cont.
3284 SOF AIRCRAFT DEFENSIVE SYSTEM	11.742	12.698	76.509	54.700	27.484	21.819	18.088	Cont.	Cont.
3326 AC-130U GUNSHIP	1.658	.469	36.476	16.248	1.330	2.650	2.701	Cont.	Cont.
D476 PSYOPS ADV DEV	1.172		.500	.363	.369	.375	4.718	Cont.	Cont.
D615 SOF AVIATION	10.494	18.924	39.097	36.844	32.704	23.958	9.880	Cont.	Cont.
S0417 UNDERWATER SYSTEMS ADV DEV	37.808	51.083	13.168	3.053	3.443	2.621	2.373	Cont.	Cont.
S1684 SOF SURFACE CRAFT ADVANCE SYSTEMS	4.553	1.000					10.379	Cont.	Cont.
S350 SOFPARS	2.340	5.089	1.789	1.897	2.681	2.641	2.518	Cont.	Cont.
S375 WEAPONS SYSTEMS ADV DEV	3.129	2.902	.252	.501	.498	.252	.858	Cont.	Cont.
S625 SOF TRAINING SYSTEMS	6.841	22.000			3.775			Cont.	Cont.
S700 SO COMMUNICATIONS ADV DEV	5.313	.852						Cont.	Cont.
S800 SO MUNITIONS ADV DEV	9.648	3.000	1.830	1.284	1.956	1.547	2.076	Cont.	Cont.
S900 SO MISCELLANEOUS EQUIPMENT ADV DEV	.780							Cont.	Cont.
SF100 AVIATION SYSTEMS ADV DEV	22.646	35.926	49.015	39.964	46.729	48.378	43.728	Cont.	Cont.
SF200 CV-22	40.224	101.661	62.807	50.843	35.562			Cont.	Cont.
A. Mission Description and Budget Item Justification									
This program element provides for development, testing, and integration of specialized equipment to meet the unique requirements of Special Operations Forces (SOF). Specialized equipment will permit small, highly trained forces to conduct required operations across the entire spectrum of conflict. These operations are generally conducted in harsh environments, for unspecified periods and in locations requiring small unit autonomy. SOF must infiltrate by land, sea, and air to conduct unconventional warfare, direct action, or deep reconnaissance operations in denied areas against insurgent units, terrorists, or highly sophisticated threat forces. The requirement to operate in denied areas controlled by a sophisticated threat mandates that SOF systems remain technologically superior to threat forces to ensure mission success.									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE PE1160404BB Spec Operations Tactical Systems Development	
<p>Change Summary Explanation:</p> <p>Funding:</p> <p>-- This program element received \$3.060 million of FY 2002 Defense Emergency Response Funds for the following: Leaflet Delivery System (\$1.701), PSYOP Broadcast System (\$0.150), Special Purpose Receiver-Variant (\$0.780), and Man-Portable Decontamination (\$0.429).</p> <p>-- FY 2001 reflects a \$25.700 million Above Threshold Reprogramming approved by Congress for the Advanced SEAL Delivery System.</p> <p>-- FY 2002 Congressional Actions:</p> <p>Project 3284: Section 8123 and undistributed general rescissions (-\$2.885 million)</p> <p>Project D476: The entire amount was rescinded (-\$0.55 million)</p> <p>Project D615: Rotary Wing UAV (\$6.7 million), 160th SOAR Modifications (\$1 million), and Underwater Breathing Apparatus (\$1 million)</p> <p>Project S0417: Advanced Sea, Air, Land Delivery System (\$7 million) and Surface Planing Wet Submersible (\$3.7 million)</p> <p>Project 1684: MK-V Computer Upgrade (\$1 million)</p> <p>Project S375: Miniature Day/Night Mounts (\$1.5 million) and Titanium Tilting Helmet Mounts (\$1 million)</p> <p>Project S900: The entire amount was rescinded (-\$0.301 million)</p> <p>Project SF100: Leading Edge Technology (\$4.3 million)</p> <p>Schedule: Project S0417. Non-Gasoline Burning Outboard Engine (NBOE). In December 2000, Outboard Marine Corporation (OMC), developer of the NBOE, filed for Chapter 11 bankruptcy protection. The engine department of OMC was purchased by Bombardier Motor Corporation of America (BMCA). BMCA has indicated a desire to complete the previous effort begun by OMC; unfortunately, there were no funds available until FY 2002. In FY 2002, the plan is to complete development of the NBOE and begin testing, with follow-on production scheduled to begin in FY 2003.</p> <p>Technical: None.</p>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE PE1160404BB Spec Operations Tactical Systems Development		
B. Program Change Summary	FY 2001	FY 2002	FY 2003
Previous President's Budget	157.130	232.140	113.761
Appropriated Value	139.920	255.604	
Adjustments to Appropriated Value / President's Budget	18.428		167.682
Current Budget Submit	158.348	255.604	281.443

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)						DATE FEBRUARY 2002			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284						
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
3284, Special Operations Forces Aircraft Defensive System	11.742	12.698	76.509	54.700	27.484	21.819	18.088	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project provides definition, development, prototyping and testing of aircraft defensive avionics systems. Project identifies hardware and software enhancements for each Special Operations Forces (SOF) aircraft that will reduce detection, vulnerability, and threat engagement from threat radars and infrared (IR) missiles, thereby increasing the overall survivability of SOF assets. This project identifies and develops enhancements to each platform to meet the projected threat. Recommendations for equipment modification or replacement will be developed by each system program manager based upon the results of ongoing engineering assessments and user operational requirements. This project funds dispenser upgrade and improvement programs, threat and missile warning receiver enhancements, radio frequency jammer improvements, and development of AC-130 engine IR suppression system and IR jamming system. Project also provides systems for SOF-unique portions of the Warner Robins-Air Logistics Center Electronic Warfare Avionics Integrated Systems Facility. Sub-projects include:</p> <ul style="list-style-type: none"> <li>• C-130 Engine IR Suppression (AC-130H/U, MC-130E/H, MC-130P/N,). Program to develop an engine IR signature suppression system for Air Force Special Operations Command (AFSOC) C-130 aircraft. The system will reduce the IR signature of these aircraft, thereby reducing their susceptibility to generation I and II IR missile threats.</li> <li>• Directional Infrared Countermeasures (DIRCM). The baseline program is a joint international cooperative United Kingdom (UK)/United States (US) project to develop and procure an IR jammer for MC-130E/H and AC-130H/U aircraft capable of countering missile threats in the band one, two and four IR frequency spectrum. The DIRCM Pre-Planned Product Improvement (P3I) program include upgrades to a laser jamming source and the development and installation of an advanced missile warning system.</li> </ul>									

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284	
<ul style="list-style-type: none"> <li>Electronic Warfare Avionics Integrated Systems Facility (EWAISF). The EWAISF directly supports software development and testing. The EWAISF effort is a type of systems integration laboratory designed to support the incorporation of SOF aircraft defensive systems modifications into specific SOF platforms.</li> <li>High Power Fiber Optic Towed Decoys (HPFOTD) for AC-130 H/U Gunships and MC-130 E/H Talon aircraft. Program funds the development and testing of a nondevelopmental item, HPFOTD, that uses the ALQ-172 as a techniques generator. The HPFOTD will be installed on all AFSOC AC-130 H/U and MC-130 E/H aircraft to provide protection against monopulse and other radar guided and surface to air and air to air missile systems.</li> <li>Low Band Jammer (LBJ). Program funds the development of the ALQ-172 LBJ modification. The LBJ will improve the capability of the ALQ-172 radio frequency jammer by adding low band jamming coverage for 13 AC-130U Gunships and 24 MC-130H Combat Talon II aircraft.</li> </ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>(2.950) C-130 Engine IR Suppression. Initiated Engineering and Manufacturing Development (EMD) and prepared for flight test program and Milestone III. (1QTR01-4QTR01)</li> <li>(7.515) DIRCM. Continued to support a cooperative UK/US development/production program for 59 SOF C-130 aircraft. Continued to fund non-recurring engineering costs for development of a laser upgrade insert for the DIRCM for MC-130H Combat Talon II, AC-130U Gunship, and CV-22 aircraft. Began Operational Test and Evaluation (OT&amp;E) for MC-130E/H Combat Talon and AC-130H/U Gunship models. (3QTR01-4QTR01)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284	
<ul style="list-style-type: none"> <li>(1.277) EWAISF. Awarded two contracts for the design and development of a new threat generation capability in the digital generation subsystem and the MH-53M Integrated Support Stations. (2QTR01)</li> </ul> <p>FY2002 PLAN:</p> <ul style="list-style-type: none"> <li>(1.706) DIRCM. Continue to support a cooperative UK/US development/production program for 59 SOF C-130 aircraft. Continue to fund DIRCM non-recurring engineering costs and contractor engineering support. Complete OT&amp;E for MC-130-E/H Combat Talon and AC-130U Gunship models. (1QTR02-4QTR02)</li> <li>(1.514) EWAISF. Continue to support laboratory efforts to maintain SOF aircraft defensive systems. (2QTR02)</li> <li>(9.478) HPFOTD. Begin non-recurring engineering efforts on Towed Decoy and on aircraft integration efforts. (3QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>(25.510) DIRCM. Continue to support a cooperative UK/US development/production program for 59 SOF C-130 aircraft and contractor engineering support and fund non-recurring engineering costs. Fund development and non-recurring engineering costs of a laser upgrade insert and the Multi-Spectral Missile Warning System as P3I for DIRCM. (1QTR03-3QTR03)</li> <li>(1.499) EWAISF. Continue to support laboratory efforts to maintain SOF aircraft defensive systems. (2QTR03)</li> <li>(21.000) LBJ. Develop and test the LBJ modification for AC-130U and MC-130H aircraft. Funds will provide for trial installation on one aircraft from each fleet. (2QTR03)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002																																																						
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284																																																								
<ul style="list-style-type: none"> <li>(28.500) HPFOTD. Continue non-recurring engineering for Towed Decoy, and initiate development and testing of aircraft integration efforts. (1QTR03-4QTR03)</li> </ul> <p style="margin-top: 20px;"><b>B. <u>Other Program Funding Summary</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 5%; text-align: center;"><u>FY01</u></th> <th style="width: 5%; text-align: center;"><u>FY02</u></th> <th style="width: 5%; text-align: center;"><u>FY03</u></th> <th style="width: 5%; text-align: center;"><u>FY04</u></th> <th style="width: 5%; text-align: center;"><u>FY05</u></th> <th style="width: 5%; text-align: center;"><u>FY06</u></th> <th style="width: 5%; text-align: center;"><u>FY07</u></th> <th style="width: 10%; text-align: center;"><u>To Complete</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, C130 Mods</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>DIRCM Laser</td> <td></td><td></td><td style="text-align: right;">34.300</td> <td style="text-align: right;">31.603</td> <td style="text-align: right;">21.084</td> <td style="text-align: right;">2.966</td> <td style="text-align: right;">2.960</td> <td></td> <td style="text-align: right;">92.913</td> </tr> <tr> <td>LBJ</td> <td></td><td></td> <td style="text-align: right;">5.900</td> <td style="text-align: right;">33.189</td> <td style="text-align: right;">56.421</td> <td style="text-align: right;">58.322</td> <td style="text-align: right;">28.216</td> <td></td> <td style="text-align: right;">182.048</td> </tr> <tr> <td>HPFOTD</td> <td></td><td></td> <td></td> <td style="text-align: right;">8.718</td> <td style="text-align: right;">67.606</td> <td style="text-align: right;">65.044</td> <td style="text-align: right;">1.579</td> <td></td> <td style="text-align: right;">142.947</td> </tr> </tbody> </table> <p style="margin-top: 20px;"><b>C. <u>Acquisition Strategy</u>:</b></p> <ul style="list-style-type: none"> <li>C-130 Engine IR Suppression. Produce request for proposals and competitively select one contractor to enter engineering and manufacturing development. This program is a continuing effort, based upon lessons learned, of a previous suppression program. A market survey was done (to minimize risk) which proved the maturity of the technology that is available in the industry today.</li> <li>DIRCM. The memorandum of agreement between the UK/US established the cooperative international baseline DIRCM program. The UK Ministry of Defense is the lead for the program. UK law applies to all baseline acquisition actions. USSOCOM program manager is the US Deputy to the UK DIRCM program manager. There is a separate contract which includes laser and advanced missile warning systems development. (Current DoD policy prevents cooperative laser development with UK.) The laser will be a sole source contract with the existing DIRCM contractor. The advanced missile warning system contract will be competitively awarded.</li> </ul>											<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	PROC, C130 Mods										DIRCM Laser			34.300	31.603	21.084	2.966	2.960		92.913	LBJ			5.900	33.189	56.421	58.322	28.216		182.048	HPFOTD				8.718	67.606	65.044	1.579		142.947
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																																																		
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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284							
<ul style="list-style-type: none"> <li>EWASIF. Award sole source contracts to the manufacturer of the prime mission equipment required for hardware and software integration into the EWASIF.</li> <li>LBJ. Program will complete modification of two remaining aircraft series (AC-130U and MC-130H) with LBJ capability. Program will capitalize on previous SOF aircraft modifications with the LBJ, evaluate two competing systems and will use a best value approach. Program management will be provided through an AF System Program Office and a pre-competed contract will be used for integration and installation.</li> <li>HPFOTD. Perform a market survey of the existing Towed Decoy currently available in the US market place. Conduct an assessment to determine which non-developmental item meets operational requirements. If more than one vendor meets all requirements, down-select based on best value. Perform non-recurring engineering efforts in preparation of aircraft integration on all AFSOC AC-130H/U and MC-130E/H platforms.</li> </ul>												
					<u>FY01</u>		<u>FY02</u>		<u>FY03</u>			
					1	2	3	4	1	2	3	4
<b>D. Schedule Profile</b>												
C-130 Engine IR Suppression												
EMD Contract Award					x							
Developmental Testing/Initial OT&E					x	x	x	x				
DIRCM												
AC-130H/U And MC-130E/H OT&E					x	x	x	x	x	x	x	
AC-130H/U And MC-130E/H Non-Recurring Engineering											x	x
Laser Development					x	x	x	x			x	x
Missile Warning System Development											x	x
EWASIF Facility												
Contract Award for MH-53J/M Integrated Support Station						x						
Laboratory Testing and Evaluation						x	x	x	x	x	x	x

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)				DATE FEBRUARY 2002			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3284					
		<u>FY01</u>		<u>FY02</u>		<u>FY03</u>	
HPFOTD							
Contract Award				X			
Non-Recurring Engineering and Aircraft Integration				X		X X X X X X	

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Page 1 of 2 Pages  
Exhibit R-3, Cost Analysis

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Aircraft Defensive System/3284							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Developmental Test & Eval Infrared Suppression System	MIPR MIPR	WSMR/46TW/Other (DIRCM) Various	14.047	0.704 1.093	Sep-01 Various	0.400	Dec-02			Cont.	Cont. 1.093
Subtotal T&E			14.047	1.797		0.400				Cont	Cont
Remarks:											
Contractor Engineering Spt	FP FP SS/FFP SS/CPFF	BAH (DIRCM) TBD MTI; Warner Robins, Ga SSAI; Warner Robins, Ga	17.424 4.820 3.172			0.706	Aug-02	0.950	May-03	Cont. Cont. Cont.	Cont. Cont. Cont.
Government Engineering Spt Travel	MIPR N/A	Crane DIV/other	0.184 1.329	0.024	Various					Cont. Cont.	Cont. Cont.
Subtotal Management			26.929	0.024		0.706		0.950		Cont.	Cont.
Remarks:											
Total Cost			136.927	11.742		12.698		76.509		Cont	Cont
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Aircraft Defensive System/3284							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Primary Hardware Dev											
Directional Infrared Countermeasures (DIRCM)	SS/FFP	Northrop (Chicago)	77.507								77.507
Sust Engineering DIRCM	SS/CPFF	Northrop (Chicago)	0.159	0.975	Sep-01	0.600	Mar-02	0.560	Mar-03	Cont.	Cont.
	MIPR	Various	0.466								0.466
LASER	SS/CPFF	Northrop (Chicago)	4.698	5.812	Jun-01					Cont.	Cont.
	MIPR	AFEWS	0.500					14.500	Dec-02	Cont.	Cont.
Missile Warning System	CPFF/CPAF	TBD						9.500	Feb-03	56.100	65.600
Infrared Suppression System	CPFF/FFP	Boeing, Ft. Walton Beach, FL	4.033	1.857	Dec-00						5.890
Electronics Warfare Avionics											
Integrated Systems Facility	SS/CPFF	GTRI, GA	8.588	1.277	Feb-01	1.514	Feb-02	1.499	Feb-03	Cont.	Cont.
HPFOTD	TBD	TBD				9.478	Jun-02	28.500	Various	20.000	57.978
Low Band Jammer	TBD	TBD						21.000	Mar-03	13.500	34.500
Subtotal Product Dev			95.951	9.921		11.592		75.559		Cont.	Cont.
Remarks:											
Development Spt											
Subtotal Spt											
Remarks:											

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3326						
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
3326, AC-130U Gunship	1.658	.469	36.476	16.248	1.330	2.650	2.701	Cont.	Cont.
<p><b>A. <u>Mission Description and Budget Item Justification</u></b></p> <p>This project provides aircraft subsystems including precision navigation, target acquisition and strike radar, fire control computers integrated on redundant MIL-STD-1553B data buses, electronic countermeasures, infrared countermeasures, aerial refueling, covert lighting, trainable weapons, all light level television, infrared sensor, and secure communications systems. The AC-130U aircraft will be more capable and survivable than the existing AC-130H aircraft. These subsystems enable the gunship to strike targets with surgical accuracy, to loiter safely in the target area for extended periods, and to perform these tasks at night and in adverse weather conditions. Every effort has been made to adapt off-the-shelf equipment. To the maximum extent possible, the subsystems in the AC-130U are common with systems on other Air Force Special Operations Command aircraft. AC-130U software is developed and sustained using a systems integration laboratory.</p> <p><b>FY 2001 ACCOMPLISHMENTS:</b></p> <ul style="list-style-type: none"> <li>• (0.477) Continued cooperative effort with Air Force (AF) laboratory to analyze and demonstrate gunship-related emerging electro-optical sensor technologies. (1QTR01)</li> <li>• (0.200) Continued technical order verification/validation and printing for various ongoing AC-130U modifications and for Organizational Maintenance Manual Sets (OMMS). (1QTR01)</li> <li>• (0.981) Continued annual ground/flight test operations and support for ongoing AC-130U modifications. (2QTR01-4QTR01)</li> </ul>									

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3326	
<p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (0.010) Continue cooperative effort with AF laboratory to analyze and demonstrate gunship-related emerging electro-optical sensor technologies. (1QTR02)</li> <li>• (0.459) Continue annual ground/flight test operations and support for ongoing AC-130 modifications. (1QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>• (0.065) Continue effort with AF laboratory to analyze and demonstrate gunship-related emerging electro-optical sensor technologies. (1QTR03)</li> <li>• (0.195) Continue technical order verification/validation and printing for various ongoing AC-130U modifications and for OMMS. (1QTR03)</li> <li>• (0.750) Continue ground and flight test operations and support for ongoing AC-130 modifications. (1QTR03)</li> <li>• (0.273) Continue technical studies and reliability/maintainability studies. (1QTR03)</li> <li>• (0.193) Continue reliability and maintainability improvements and investigation of existing or new deficiency reports. (1QTR03)</li> <li>• (35.000) Begin development of modifications to two C-130H's being added to the gunship inventory, including weight and drag reduction designs, revised survivability studies, and a common electro-optical sensor system. (2QTR03)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)						DATE FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7						R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project 3326					

**B. Other Program Funding Summary**

	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	To <u>Complete</u>	Total <u>Cost</u>
PROC, AC-130U	9.360	8.705	65.502	177.414	22.007	212.555	212.315	Cont.	Cont.

**C. Acquisition Strategy:**

- Modify C-130H airframe into a side-firing gunship configuration on a sole-source fixed price incentive fee development contract. Conduct a combined Qualification Test and Evaluation/Qualification Operational Test and Evaluation (QOT&E), and a dedicated QOT&E. The AC-130U is logistically supported at organizational, intermediate and depot levels. Initial operational capability occurred in March 1996, and full operational capability is scheduled for FY 2002. Funding increase in FY 2003 supports development of 2 additional gunships.

	<u>FY01</u>				<u>FY02</u>				<u>FY03</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>D. <u>Schedule Profile</u></b>												
Initial Operational Capability: Mar 1996												
Final Aircraft Delivery: Mar 1997												
System Integration		x	x	x	x	x	x	x	x	x	x	x
Software Test and Evaluation			x	x	x	x	x	x	x	x	x	x
Full Operational Capability (AC-130U Gunship)						x						
Contract Award for 2 additional AC-130U Gunships										x		

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				AC-130U Gunship /3326							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Product Dev Organizations											
Tech Studies & Analysis	AF616	Air Force Research Lab, Wright Patterson AFB, OH	0.230					0.273	Nov 01	Cont.	Cont.
Tech Order Verification and Validation	Various	Various	0.342	0.200	Various			0.195	Various	Cont.	Cont.
Reliability and Maintainability	C/CPAF	Boeing, Ft. Walton Beach, FL	0.572					0.193	Dec 02	Cont.	Cont.
Subtotal Product Dev			1.144	0.200		0.000		0.661		Cont.	Cont.
Dev Spt	AF616	Air Force Research Lab, Wright Patterson AFB, OH	0.789	0.477	Various	0.010	Dec-01	0.065	Dec 02	Cont.	Cont.
Subtotal Spt			0.789	0.477		0.010		0.065		Cont.	Cont.
Devel Test & Eval	PO	46OG Det 1, Hurburt Field, FL	35.425	0.981	Various	0.459	Dec-01	0.750	Dec 02	Cont.	Cont.
Test & Eval - (2 new Gunships)	Various	Various						35.000	Mar 03	15.000	50.000
Subtotal T&E			35.425	0.981		0.459		35.750		Cont.	Cont.
Management											
Subtotal Management											
Remarks:											
Total Cost			37.358	1.658		0.469		36.476		Cont.	Cont.
Remarks:											

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476							
COST (Dollars in Millions)		FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
D476, PSYOP Advanced Development		1.172		.500	.363	.369	.375	4.718	Cont.	Cont.
<p><u>A. Mission Description and Budget Item Justification</u></p> <p>This program provides for the development and acquisition of Psychological Operations (PSYOP) equipment. The purpose of PSYOP is to reinforce foreign or hostile attitudes and behavior favorable to U.S. national objectives. New and emerging national, regional, and ethnic power groupings and religious fanaticism have increased threats of terrorism, insurgency, instability, and subversion. Successful PSYOP can lower the morale and reduce efficiency of enemy forces and create dissidence and dissatisfaction within their ranks. This project funds replacement of existing 1950's and 1960's technology equipment currently employed, and provides enhanced capability to conduct tactical and theater-level PSYOP dissemination in support of regional unified commanders and their deployed task forces. The PSYOP programs funded in this project are grouped by the level of organization they support: Operational Element (Team) and Above Operational Element (Deployed). Sub-projects include:</p> <p><b>OPERATIONAL ELEMENT (TEAM)</b></p> <ul style="list-style-type: none"> <li>• Leaflet Delivery System (LDS). LDS are a family of systems, which provides PSYOP forces the ability to safely and accurately disseminate small to large quantities of PSYOP products (leaflets) over small to large area targets in all threat environments. LDS include remote-controlled systems, which can be employed from perimeter areas; payloads that can be delivered from unmanned aerial vehicles; high altitude low opening delivery systems delivered by manned aircraft. In order to accurately deliver leaflets in denied, hostile, or remote areas, some LDS will require homing and guidance systems, timers, and barometric devices for activating at pre-designated altitudes and locations. The LDS family will be varied to allow PSYOP and supporting forces to choose the appropriate system for product dissemination based on policy, operational requirements, delivery platform availability, and environmental restrictions such as wind velocities and hostile fire.</li> </ul>										

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476	
<p>ABOVE OPERATIONAL ELEMENT (DEPLOYED)</p> <ul style="list-style-type: none"> <li>PSYOP Broadcast System (POBS), formerly Special Operations Media System A (SOMS A). POBS provides an operational/strategic mobile television/radio wide area broadcast system capability. It will receive and transmit real-time PSYOP products to and from commercial and military sources by satellite and microwave. POBS will be interoperable with the fixed site media production center at Fort Bragg, NC, Theater Media Production Center (TMPC), Air National Guard Commando Solo aircraft, and the tactical SOMS B.</li> </ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>(0.422) POBS. Initiated environmental and operational testing of the TMPC and initiated user evaluation of the PSYOP Product Distribution System (PDS) and variants. (1QTR01-2QTR02)</li> <li>(0.750) Leaflet Delivery System (LDS). Funded technical and engineering management support required to develop, integrate, test, and evaluate for fielding the LDS Wind Supported Air Delivery System (WSADS) variant. (2QTR01)</li> </ul> <p>DEFENSE EMERGENCY RESPONSE FUND PLAN:</p> <ul style="list-style-type: none"> <li>(1.701) LDS. Conduct airworthiness compatibility and certification of the Rockeye Interim Solution (RIS) Leaflet Bomb. (1QTR02)</li> <li>(0.150) POBS. Conduct user evaluation of the PSYOP PDS variants. (2QTR02)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002																								
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476																										
<p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>The FY 2002 funds for this project were rescinded in the FY 2002 Appropriations Conference Report (-\$0.55 million).</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>(0.500) POBS. Begin environmental and operational testing of PSYOP PDS Fly-Away Broadcast System (FABS) variants. Complete Developmental Testing and Operational Test &amp; Evaluation of TMPC. (1QTR03)</li> </ul> <p>B. <u>Other Program Funding Summary</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FY01</th> <th style="text-align: center;">FY02</th> <th style="text-align: center;">FY03</th> <th style="text-align: center;">FY04</th> <th style="text-align: center;">FY05</th> <th style="text-align: center;">FY06</th> <th style="text-align: center;">FY07</th> <th style="text-align: center;">To Complete</th> <th style="text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>PROC, PSYOP Equipment</td> <td style="text-align: center;">8.303</td> <td style="text-align: center;">2.780</td> <td style="text-align: center;">5.642</td> <td style="text-align: center;">14.555</td> <td style="text-align: center;">8.681</td> <td style="text-align: center;">6.909</td> <td style="text-align: center;">6.406</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> </tbody> </table> <p>C. ACQUISITION STRATEGY:</p> <ul style="list-style-type: none"> <li>POBS consists of wide-area systems providing radio, television programming and multi-media production, distribution and dissemination support to the theater commander. POBS is comprised of several interfacing systems that can stand-alone or interoperate with other PSYOP systems as determined by mission requirements. The program also acquires performance enhancements to meet emergent requirements.</li> </ul>											FY01	FY02	FY03	FY04	FY05	FY06	FY07	To Complete	Total Cost	PROC, PSYOP Equipment	8.303	2.780	5.642	14.555	8.681	6.909	6.406	Cont.	Cont.
	FY01	FY02	FY03	FY04	FY05	FY06	FY07	To Complete	Total Cost																				
PROC, PSYOP Equipment	8.303	2.780	5.642	14.555	8.681	6.909	6.406	Cont.	Cont.																				

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE					
					FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D476							
			FY01		FY02		FY03			
			1	2	3	4	1	2	3	4
D. <u>Schedule Profile</u>										
Leaflet Delivery System										
Develop,integrate, DT/OT WSADS variant				x	x	x				
POBS										
MS I – May 2000										
MS II					x					
DT/OT PSYOPS PDS				x	x	x	x	x	x	
MS C										x
DT/OT TMPC				x	x	x	x	x	x	
MS C										x
DT/OT FABS									x	x

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				PSYOPS Advance Development / D476							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Primary Hardware Dev	MIPR	Natick Lab, Natick, MA	0.892	0.690	Jan-01						1.582
	MIPR	NAWC AD, St Indigoes, MD	0.132								0.132
	MIPR	NAWC AD, St Indigoes, MD	0.168								0.168
	ALLOT	Army-CECOM, Ft Monmouth, NJ	3.655								3.655
	MIPR	DOE, Nat'l Engr Lab, Idaho Falls, ID	3.240								3.240
Systems Engineering	ALLOT	Army-CECOM, Ft Monmouth, NJ	1.336								1.336
	REQN	Various	0.142					0.130	Oct-02	Cont	Cont
	MIPR	SPAWAR, Charleston, SC		0.060	Feb-01						0.060
Subtotal Product Dev			9.565	0.750				0.130		Cont	Cont
Remarks:											
					</						

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				PSYOPS Advance Development / D476							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Developmental Test & Eval	Various	Various	0.113								0.113
	MIPR	Army ATC, Aberdenn Prov Gd, MD	0.391	0.057	Feb-02			0.035	Oct-02	Cont	Cont
	MIPR	TBD	0.546								0.546
Operational Test & Eval	MIPR	JITC, Ft Huachuca, AZ	0.380	0.317	Feb-02			0.335	Oct-02	Cont	Cont
	MIPR	JITC, Ft Huachuca, AZ	0.625	0.048	Dec-00						0.673
Subtotal T&E			2.055	0.422				0.370		Cont	Cont
Remarks:											
DERF Funds:											
Operational Test & Eval	MIPR	NAWC AD, St. Indigoes, MD				0.150	Jan-02				0.150
Operational Test & Eval	MIPR	NAWC AD, St. Indigoes, MD				1.701	Dec-01				1.701
Contractor Engineering Spt	OPFF	Booz-Allen Hamilton, McLean, VA	0.410								0.410
Government Engineering Spt	MIPR	MITRE, McLean, VA	0.075								0.075
Program Management Spt	MIPR	SOFSA, Lexington, KY	0.053								0.053
	MIPR	LOGSA, Redstone Arsenal, AL	0.291								0.291
	Various	Various	0.072								0.072
Subtotal Management			0.901								0.901
Remarks:											
Total Cost			12.521	1.172		0.000		0.500		Cont	Cont
Remarks:											

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615							
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
D615, Special Operations Forces Aviation	10.494	18.924	39.097	36.844	32.704	23.958	9.880	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project provides aviation support to Special Operations Forces (SOF) in worldwide contingency operations and low-intensity conflicts. The specialized aircraft for these missions must be capable of rapid deployment and undetected penetration of hostile areas. These aircraft must be capable of operating at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF. The threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters. Third World operations are apt to involve greater distances and more challenging geographical environmental conditions than the European theater. This project will develop/upgrade the Special Operations rotary wing aircraft systems that will be capable of successful operations in these increasingly hostile environments. Rotary wing systems supported by this project include: A/MH-6, MH-60L/K, MH-47D/E/G and MH-53. Efforts include:</p> <ul style="list-style-type: none"> <li>• A/MH-6. (1) Develops lightweight, rapidly reconfigurable mission support equipment. (2) Prototypes, tests, and fields structural fuselage modifications to increase the maximum gross weight by 25%.</li> <li>• MH-47/MH-60K. (1) Develops and tests aircraft survivability equipment hardware and software. (2) Develops and tests the MH-60 fuel control system, develops and tests ballistically tolerant composite small arms protection system for vulnerable helicopter systems. (3) Develops and tests cockpit, hardware, and software improvements to communication and navigation systems. (4) Develops, procures and installs a system that inerts (exchanging oxygen with nitrogen) in the main and auxiliary fuel tanks to improve survivability from small arms fire. (5) Provides for non-recurring engineering and vibration testing for MH-47 Service Life Extension Program (SLEP).</li> </ul>									

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<ul style="list-style-type: none"><li>• MH-53. Provides non-recurring engineering associated with incorporation of the Directional Infrared Countermeasures (DIRCM) system. DIRCM provides an Infrared (IR) jamming capability that counters missile threats in the band one, two, and four IR frequency spectrum.</li><li>• SOCOM Unmanned Aerial Vehicle (UAV) includes the Maverick and Hummingbird systems. This program demonstrates the relevance of an unmanned flight system in SOF applications.</li><li>• Diving enhancements include the Underwater Breathing Apparatus (UBA) project enhancement. This upgrade will result in an increase to the lock in/lock out depth capability of the Advanced SEAL Delivery System and SEAL Delivery System platforms. This Congressional add will either be reprogrammed to Project S200 or realigned to Project S0417.</li></ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"><li>• (1.972) MH-47/MH-60. Continued combined Infrared Countermeasures (IRCM) and Suite of IR Countermeasures integration to treat MH-47 and MH-60 fleet IRCM as a single integrated program. Initiated development, integration and testing of Nuclear, Biological, and Chemical (NBC) crew protection system and NBC point detection system. (1QTR01-4QTR01)</li><li>• (4.547) A/MH-6. Continued prototype testing of the Mission Enhanced Little Bird (MELB) aircraft to include integration of the Allison 250-C30/R3 engine, and Full Authority Digital Electronic Control software refinement. Continued to provide for extensive Electromagnetic Interference/Electromagnetic Countermeasure integration and testing of MELB aircraft. This included shipboard compatibility, full certification at the Dahlgren facility and additional shielding/protection for the aircraft systems. Completed the replacement of large single functional analog components with fleet common miniaturized, lightweight multifunctional reconfigurable displays for flight, navigation, communication and weapons systems management. (1QTR01-4QTR01)</li></ul>		

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<ul style="list-style-type: none"> <li>(3.975) MH-47/MH-60. Continued to rehost Integrated Avionics System software onto new mission processor. Provided for accelerated integration and testing of Modular Avionics. Program incorporates modularized avionics and open systems computer architecture. (1QTR01-4QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>(4.582) MH-47/MH-60. Complete the development, integration and testing of the NBC crew protection system and NBC point detection system. Provide for airframe vibration analysis and non-recurring engineering drawings for the MH-47 SLEP. Provide for SOF unique modification to Air Transportability Kits for the MH-47E (originally justified under the fourth bullet – restructured the bullets). (1QTR02-4QTR02)</li> <li>(0.433) A/MH-6. Continue prototype testing of the MELB aircraft. Complete the integration of Allison 250-C30/R3 engine and Full Authority Digital Electronic Control software refinement. Provide for the G Cal 50 machine gun, which replaces the current M2AC machine gun for the MELB aircraft. Complete Electromagnetic Interference/Electromagnetic Countermeasure integration and testing of MELB aircraft. This includes shipboard compatibility, full certification at the Dahlgren facility and additional shielding/protection for the aircraft systems. (1QTR02-4QTR02)</li> <li>(5.767) MH-47/MH-60. Fund development of new multi-function displays. Continue integration and testing of Modular Avionics, which incorporates modularized avionics and open system computer architecture. Continue to rehost Integrated Avionics System software into a new mission processor. The rehosting is essential prior to procurement of a new mission processor to alleviate significant technical risk. (1QTR02-4QTR02)</li> <li>(0.442) MH-60L. Develop, integrate, and test MH-60L Integrated Defensive Armed Penetrator improvements to include the life cycle upgrade/replacement of the current Monocular Head Up Display (MONO-HUD), weapons management system and weapons. (1QTR02-4QTR02)</li> <li>(6.700) SOCOM UAV. Demonstrate the relevance of an unmanned flight system in SOF applications. (2QTR02-4QTR02)</li> </ul>		

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<ul style="list-style-type: none"> <li>(1.000) UBA Project Enhancement. Procure and test a commercially available UBA, to include product documentation such as an operation and maintenance manual, certification drawings, and software verification. Also includes labor costs and the cost of spare parts associated with field trials. (2QTR02-4QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>(0.431) A/MH-6. Complete prototype testing of the G Cal 50 machine gun, which replaces the current M2AC machine gun for the MELB aircraft. (1QTR03)</li> <li>(29.666) MH-47/MH-60/A/MH-6. Begin development of assault and attack Forward Looking Infrared (FLIR) systems to replace aging Q-16B and D systems for the fleet of ARSOA aircraft. Continue non-recurring engineering for the MH-47 SLEP. Begin effort to develop a replacement radar altimeter that is less detectable. Begin development and testing of panoramic night vision goggles, a rotary wing Terrain Following/Terrain Avoidance (TF/TA) navigation system and an Obstacle Avoidance/Cable Warning (OA/CW) system for use for all platforms. (1QTR03-4QTR03)</li> <li>(9.000) MH-53. Complete non-recurring engineering associated with incorporation of the DIRCM system. DIRCM provides an IR jamming capability that counters missile threats in the band one, two, and four IR frequency spectrum. (2QTR03-4QTR03)</li> </ul> <p>B. <u>Other Program Funding Summary</u></p> <table style="width: 100%; margin-top: 20px;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY01</u></th> <th style="text-align: center;"><u>FY02</u></th> <th style="text-align: center;"><u>FY03</u></th> <th style="text-align: center;"><u>FY04</u></th> <th style="text-align: center;"><u>FY05</u></th> <th style="text-align: center;"><u>FY06</u></th> <th style="text-align: center;"><u>FY07</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, Rotary Wing Upgrades &amp; Sustainment</td> <td style="text-align: right;">68.755</td> <td style="text-align: right;">80.182</td> <td style="text-align: right;">289.792</td> <td style="text-align: right;">338.947</td> <td style="text-align: right;">246.004</td> <td style="text-align: right;">233.328</td> <td style="text-align: right;">212.736</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> </tbody> </table>											<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	PROC, Rotary Wing Upgrades & Sustainment	68.755	80.182	289.792	338.947	246.004	233.328	212.736	Cont.	Cont.
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																				
PROC, Rotary Wing Upgrades & Sustainment	68.755	80.182	289.792	338.947	246.004	233.328	212.736	Cont.	Cont.																				

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project D615							
<p>C. <u>Acquisition Strategy</u>: None.</p>												
					<u>FY01</u>		<u>FY02</u>		<u>FY03</u>			
D. Schedule Profile					1	2	3	4	1	2	3	4
MELB Prototype Testing					x	x	x	x	x	x	x	
MELB Miniaturization					x	x	x	x				
MELB MS IIIB						x						
MELB Electro-magnetic Interference/Electro-magnetic Countermeasures Integration and Testing					x	x	x	x	x			
ASE Testing and Installation					x	x	x					
Multimode Radar Weather Card					x	x	x	x	x			
NBC Crew Protection MH-60/MH-47								x	x	x	x	
MH-47 SLEP									x	x	x	x
A/MH-6 G Cal 50									x	x	x	
Modular Avionics					x	x	x	x	x	x	x	x
Army Airborne Command and Control Antenna Pack									x	x	x	
Global Positioning System/Inertial Navigation System						x						
MH 60L Defensive Armed Penetrator Improvements									x	x		
MH-47E Air Transportability Kits									x	x	x	
Multi-Function Displays									x	x	x	x

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					FY01				FY02				FY03			
D. Schedule Profile					1	2	3	4	1	2	3	4	1	2	3	4
Next Generation FLIR													X	X	X	X
Radar Altimeter Modifications														X	X	
Panoramic Night Vision Goggles															X	X
Vertical Lift TF/TA													X	X	X	X
OA/CW													X	X	X	X
SOCOM UAV									X	X	X					
UBA Project Enhancement									X	X	X					
MH-53 DIRCM														X	X	X

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Aviation/D615							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Primary Hardware Dev											
MH-47/60	Various	PM TAPO/Ft Eustis, VA		5.339	Various	4.352	Various	20.900	Various	Cont.	Cont.
A/MH-6	Various	PM-MELB/Ft Eustis, VA		1.082	Mar-01	0.157	Mar-02			Cont.	Cont.
SOCOM UAV	CFF	Frontier System, Inc., Irvine, CA				5.500	Various				5.500
	CFF	Batelle, Columbus, OH				0.550	Various				0.550
UBA Project Enhancement	TBD	NEDU, Panama City, FL				0.900	Various				0.900
MH-53	TBD	Northop-Grumman, Annapolis, MD						9.000	Various		9.000
Subtotal Product Dev			0.000	6.421		11.459		29.900		Cont.	Cont.
Remarks:											
UBA Project Enhancement	Various	NEDU, Panama City, FL				0.100	Various				0.100
Subtotal Spt						0.100					0.100
Remarks:											

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RDT&E DEFENSE-WIDE / 7				Special Operations Forces Aviation/D615							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Developmental Test & Eval											
MH-47/60	Various	PM TAPO/Ft Eustis, VA		0.608	Jul-01	6.439	Various	8.766	Various	Cont.	Cont.
A/MH-6	Various	PM-MELB/Ft Eustis, VA		3.465	Various	0.276	Various	0.431	Dec-02	Cont.	Cont.
SOCOM UAV	MIPR	ARL, Aberdeen Proving Ground, MD				0.650	Various				
Subtotal T&E			0.000	4.073		7.365		9.197		Cont.	Cont.
Remarks:											
Subtotal Management											
Remarks:											
Total Cost			0.000	10.494		18.924		39.097		Cont.	Cont.
Remarks:											

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417						
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S0417, Underwater Systems Advanced Development	37.808	51.083	13.168	3.053	3.443	2.621	2.373	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project funds the development of Naval Special Warfare (NSW) support items used during hydrographic/inland reconnaissance, beach obstacle clearance, underwater ship attack, and other direct action missions. Sub-projects include:</p> <ul style="list-style-type: none"> <li>Advanced Sea, Air, Land (SEAL) Delivery System (ASDS). The ASDS is a manned combatant mini-submarine used for the clandestine delivery of Special Operations Forces (SOF) personnel and weapons. The ASDS will provide the requisite range, endurance, payload, and other capabilities for operation in the full range of threat environments.</li> <li>Surface Planing Wet Submersible (SPWS). The SPWS is a multi-mission, combat-ready platform, capable of medium to high speed surface and submerged operations in open ocean, coastal, and littoral environments. The SPWS provides NSW with the capability to perform insertion/extraction of SOF on the surface with the speed and range of a planing boat, and submerged with the clandestine capabilities of a submersible.</li> <li>Undersea Systems. Development of undersea systems which provide the SOF combat swimmers with the necessary diving and diving related equipment to fulfill assigned underwater combat missions includes the following:</li> <li>Naval Special Warfare (NSW) Very Shallow Water Mine Countermeasures (VSW MCM). Phased development/improvement equipment to support the combat swimmer in the NSW VSW MCM operational environment.</li> </ul>									

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417	
<ul style="list-style-type: none"><li>• Non-Gasoline Burning Outboard Engine (NBOE). Development of a submersible alternative fuel outboard engine for use on SOF Combat Rubber Raiding Craft.</li><li>• Swimmer Transport Device (STD). Test and procure a Commercial-Off-the-Shelf (COTS)/Non-Developmental Item (NDI) undersea mobility vehicle to transport combat swimmers when the distance from host delivery vehicles to the target area or landing site is excessive.</li><li>• SEAL Delivery Vehicle (SDV). Replace obsolescent and/or unsupportable electronics with current maintainable systems to improve reliability.</li></ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"><li>• (34.015) ASDS. Completed contractor deep water trials, received Navy certification, and accepted delivery of first ASDS vehicle. Commenced hydrodynamic testing of host ship maneuvering characteristics and support of Virginia Class host submarine design efforts. Continued development of Pre-Planned Product Improvement (P3I) to include degaussing and batteries. (1QTR01-4QTR01)</li><li>• (3.071) NSW VSW MCM. Conducted developmental testing/operational testing and began P3I development efforts for the Semi-Autonomous Hydrographic Reconnaissance Vehicle. Conducted developmental and operational testing of the Hydrographic Reconnaissance Littoral Mapping Device. (1QTR01-3QTR01)</li><li>• (0.212) STD. Completed testing of COTS/NDI units and initiated first production lot buy. (1QTR01-4QTR01)</li><li>• (0.510) SDV. Developed, tested, and procured improved electronics components. (1QTR01-4QTR01)</li></ul>		

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<p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (44.850) ASDS. Complete host ship sea trials and acoustic trials. Continue Live Fire Test and Evaluation efforts. Continue P3I (battery and acoustics) development efforts and host submarine support. (1QTR02-4QTR02)</li> <li>• (3.700) SPWS. Complete the design and fabrication of the first SPWS craft. Perform government evaluation and technical trials, and deliver the completed SPWS to the user for evaluation. (1QTR02-4QTR02)</li> <li>• (1.978) NSW VSW MCM. Continue P3I development efforts for the SAHRV program. (1QTR02-4QTR02)</li> <li>• (0.301) NBOE. Continue development of the alternative fuels engine. (1QTR02)</li> <li>• (0.254) SDV. Develop, upgrade/replace obsolete and/or unsupportable electronic equipment. (1QTR02-4QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>• (12.151) ASDS. Complete government testing phase to include operational evaluation. Continue P3I efforts on battery and acoustics. Continue development effort for NSSN host platform. (1QTR03-4QTR03)</li> <li>• (0.550) NSW VSW MCM. Continue P3I development efforts for the SAHRV program. (1QTR03-4QTR03)</li> <li>• (0.250) NBOE. Complete development of the alternative fuels engine. (1QTR03)</li> <li>• (0.217) SDV. Continue to develop and upgrade/replace obsolete and/or unsupportable electronic equipment. (1QTR03-4QTR03)</li> </ul>		

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<p><b>B. <u>Other Program Funding Summary</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 5%; text-align: center;"><u>FY01</u></th> <th style="width: 5%; text-align: center;"><u>FY02</u></th> <th style="width: 5%; text-align: center;"><u>FY03</u></th> <th style="width: 5%; text-align: center;"><u>FY04</u></th> <th style="width: 5%; text-align: center;"><u>FY05</u></th> <th style="width: 5%; text-align: center;"><u>FY06</u></th> <th style="width: 5%; text-align: center;"><u>FY07</u></th> <th style="width: 10%; text-align: center;"><u>To Complete</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>ASDS</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROC, ASDS</td> <td style="text-align: right;">10.474</td> <td style="text-align: right;">27.428</td> <td style="text-align: right;">21.804</td> <td style="text-align: right;">129.539</td> <td style="text-align: right;">30.430</td> <td style="text-align: right;">24.074</td> <td style="text-align: right;">135.019</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> <tr> <td>PROC, ASDS Adv Proc</td> <td></td> <td style="text-align: right;">13.697</td> <td style="text-align: right;">34.730</td> <td></td> <td style="text-align: right;">34.645</td> <td style="text-align: right;">25.207</td> <td></td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> <tr> <td>Maritime Equip</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROC, VSW MCM.</td> <td></td> <td style="text-align: right;">1.168</td> <td style="text-align: right;">.856</td> <td></td> <td></td> <td style="text-align: right;">1.104</td> <td></td> <td></td> <td style="text-align: right;">3.128</td> </tr> <tr> <td>PROC, NBOE</td> <td></td> <td></td> <td style="text-align: right;">1.669</td> <td style="text-align: right;">.933</td> <td></td><td></td><td></td> <td></td> <td style="text-align: right;">2.602</td> </tr> <tr> <td>PROC, STD</td> <td style="text-align: right;">0.911</td> <td style="text-align: right;">1.188</td> <td></td><td></td><td></td><td></td><td></td> <td></td> <td style="text-align: right;">2.099</td> </tr> <tr> <td>MK 8 MOD 1 SDV</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PROC, MK8 MOD 1 SDV</td> <td></td> <td style="text-align: right;">0.504</td> <td style="text-align: right;">8.484</td> <td style="text-align: right;">1.283</td> <td style="text-align: right;">1.826</td> <td style="text-align: right;">1.883</td> <td style="text-align: right;">10.977</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> </tbody> </table> <p><b>C. <u>Acquisition Strategy:</u></b></p> <ul style="list-style-type: none"> <li>ASDS. Selected three qualified companies to develop independent preliminary designs. Following completion of the preliminary design efforts, a request for proposal for the engineering and manufacturing development contract was released to these companies for proposal submittal for the design, fabrication, and test of the first ASDS. A single contractor was selected based on a best value source selection process.</li> <li>HRLMD. Established to acquire a small, handheld unit to be used by NSW forces in the conduct of clandestine hydrographic reconnaissance, ship attack and mine countermeasures missions. The program utilizes COTS technology and employs a phased acquisition strategy designed to leverage</li> </ul>											<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	ASDS										PROC, ASDS	10.474	27.428	21.804	129.539	30.430	24.074	135.019	Cont.	Cont.	PROC, ASDS Adv Proc		13.697	34.730		34.645	25.207		Cont.	Cont.	Maritime Equip										PROC, VSW MCM.		1.168	.856			1.104			3.128	PROC, NBOE			1.669	.933					2.602	PROC, STD	0.911	1.188							2.099	MK 8 MOD 1 SDV										PROC, MK8 MOD 1 SDV		0.504	8.484	1.283	1.826	1.883	10.977	Cont.	Cont.
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																																																																																																				
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S0417	
<p>similar efforts currently being pursued by the Navy. User evaluation of prototype units and further design refinement, as well as developmental testing and follow-on operational assessment, will culminate in a Technical Data Package sufficient to permit a competitive procurement.</p> <ul style="list-style-type: none"> <li>• NBOE. Transition of technology demonstrator to an acquisition program which commenced with advanced demonstration and validation. Modifications to current Military Amphibious Reconnaissance System engine include advanced electronically controlled direct fuel injection and ignition technologies. A competitive source selection was held, with three vendors responding, resulting in a down-select to a single contractor.</li> <li>• SAHRV. SAHRV is a small unmanned underwater vehicle for use by NSW personnel in the conduct of VSW MCM. SAHRV utilizes COTS technology and employs a phased acquisition strategy designed to leverage Office of Naval Research sponsored initiatives. Four engineering development models (EDMs) were delivered in December 2000. The EDMs support developmental testing and operational testing and evaluation. Following operational testing and evaluation, a production decision will commence the production phase. Initial operational capability is planned for 1st Qtr FY03. Full operational capability of 14 units is planned to be completed by 4<sup>th</sup> Qtr FY03.</li> <li>• SDV. This effort replaces obsolete and/or unsupportable electronics equipment with current equipment. Identification and development of equipment for upgrading and/or replacing systems on the SDV will be accomplished through either Best-Value acquisition or, where appropriate, original equipment manufacturer replacement efforts.</li> </ul>		

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		<u>FY01</u>				<u>FY02</u>				<u>FY03</u>			
D. <u>Schedule Profile</u>		1	2	3	4	1	2	3	4	1	2	3	4
ASDS													
Deep Water Testing/ Delivery of First Unit to govt		x	x	x	x								
Hydrodynamic Testing (HOST)			x	x	x								
Host ship/Acoustic trials/LFT&E/OPEVAL						x	x	x	x	x			
Delivery to User (IOC)											x		
P3I Development		x	x	x	x	x	x	x	x	x	x	x	x
NBOE													
Development/Testing					x	x	x	x	x	x	x		
Milestone C												x	
NSW VSW MCM													
DT (SAHRV)			x	x	x								
OT (SAHRV)					x	x							
Milestone C (SAHRV)							x						
P3I (SAHRV)					x	x	x	x	x	x	x	x	x
DT/OT (HRLMD)				x	x	x							
Milestone C (HRLMD)							x						
STD													
Test COTS/NDI		x	x	x		x	x	x					
SDV													
Develop and Test Improved Electronics		x	x	x	x	x	x	x	x	x	x	x	x
SPWS													
Prototype Completion/Evaluation/Testing							x	x	x				

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Underwater Systems Advance Development/S0417							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Primary Hardware Dev											
SAHRV	FFP	WHOI, Woods Hole, MA	2.448	0.980	Dec-00	1.425	Dec-01	0.211	Oct-02	1.929	6.993
HRLMD	FFP	UT-ARL, Austin, TX		0.500	Dec-00						0.500
NBOE	CPF	TBD	0.507			0.250	Dec-01	0.200	Oct-02		0.957
SDV	WR	CSS, Panama City, FL	11.719	0.476	Various	0.229	Various	0.217	Various	Cont.	Cont.
STD	FFP	Stidd Systems, Inc. Greenport, NY	0.162								0.162
ASDS	CPIF/C	Northrop-Grumman	218.992	28.087	Various	11.000	Various			Cont.	Cont.
ASDS	CPFF	Newport News Ship Yard, VA	5.125	1.649	Various					Cont.	Cont.
ASDS P3I and Host Support	Various	Various	3.768	2.803	Various	7.000	Various	9.451	Various		6.571
SPWS	FFP	Stidd Systems, Inc., Greenport, NY				2.960	Various				2.960
Subtotal Product Dev			242.721	34.495		22.864		10.079		Cont.	Cont.
Remarks											
Technical Data											
ASDS	Various	Various	7.399			0.645	Various				8.044
SAHRV	WR	CSS, Panama City, FL						0.111	Oct-02	0.073	0.184
HRLMD	WR	CSS, Panama City, FL		0.200	Dec-00						0.200
NBOE	WR	CSS, Panama City, FL	0.043								0.043
Subtotal Supt.			7.442	0.200		0.645		0.111		0.073	8.471
Remarks											
Test & Evaluation											
Engineering T&E (NBOE)			0.268					0.050	Feb-02		0.318
DT&E (STD)	MIPR	CSS, Panama City, FL		0.159	Jan-00						0.159
OT&E (ASDS)	Various	OPTEVFOR, Norfolk, VA				1.085	Various	0.500	Various		1.585
Host Testing (ASDS)	Various	NAVSEA, Arlington, VA				19.115	Various				19.115
SEAFAC Trials (ASDS)	Various	NAVSEA, Arlington, VA						2.200	Various		2.200
LFT&E (ASDS)	Various	NAVSEA, Arlington, VA				5.000	Various				5.000
DT&E (SAHRV)	WR	CSS, Panama City, FL	0.035	0.187	Dec-00						0.222
DT&E (SAHRV)	WR	CARDEROCK, West Bethesda, MD		0.037	Dec-00						0.037
OT&E (SAHRV)	WR	OPTEVFOR, Norfolk, VA		0.049	Apr-01						28.636

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Underwater Systems Advance Development/S0417							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Test & Evaluation (Cont.)											
DT&E (HRLMD)	WR	CSS, Panama City, FL		0.118	Jan-01						0.118
OT&E (HRLMD)	WR	TBD		0.020	Mar-01						0.020
DT&E (SPWS)	MIPR	CSS, Panama City, FL				0.250	Various				0.250
DT&E (SPWS)	MIPR	CCD, Norfolk, VA				0.150	Various				0.150
Subtotal T&E			0.303	0.570		25.600		2.750			0.538
Remarks											
Management											
Contract Eng. Supt. (SAHRV)	FFP	ANADAC, Arlington, VA	0.451	0.223	Dec-00	0.224	Dec-01				0.898
Govt. Eng. Supt. (SAHRV)	WR	CSS, Panama City, FL	0.210	0.471	Dec-00	0.229	Dec-01	0.094	Oct-02	0.254	1.258
Program Mgt. Supt.(SAHRV)	WR	NAVSEA, Washington, DC	0.075	0.075	Various	0.100	Various	0.134	Various	0.077	0.461
Contract Eng. Supt. (HRLMD)	FFP	ANADAC, Arlington, VA		0.050	Dec-00						0.050
Govt. Eng. Supt. (HRLMD)	WR	CSS, Panama City, FL		0.089	Dec-00						0.089
Program Mgt. Supt. (HRLMD)	WR	NAVSEA, Arlington, VA		0.072	Various						0.072
Contract Eng. Supt. (NBOE)	FFP	DMR, Panama City, FL	0.165								0.165
Program Mgt. Supt (NBOE)	WR	TBD	0.781			0.051	Dec-01				0.832
Program Mgt Spt (SDV)	WR	NAVSEA, Arlington, VA	0.374	0.034	Dec-00	0.025	Various			Cont.	Cont.
Various (ASDS)	Various	Various	2.950	1.476	Various	1.005	Various			Cont.	Cont.
Program Mgt Supt. (STD)	Various	Various		0.013	Various						0.013
Govt. Eng Support (STD)	MIPR	CSS, Panama City, FL		0.040	Nov-00						0.040
Program Mgt Supt. (SPWS)	Various	SOCOM, Tampa, FL				0.155	Various				0.155
Govt Eng. Supt. (SPWS)	MIPR	CCD, Norfolk, VA				0.085	Various				0.085
Govt Eng. Supt. (SPWS)	MIPR	CSS, Panama City, FL				0.100	Various				0.100
Subtotal Management			5.006	2.543		1.974		0.228		Cont.	Cont.
Remarks:											
Total Cost			255.472	37.808		51.083		13.168		Cont.	Cont.
Remarks:											

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COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S350, Special Operations Forces Planning and Rehearsal System (SOFPARS)	2.340	5.089	1.789	1.897	2.681	2.641	2.518	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>Present mission planning capabilities cannot adequately support the stated mission need. Existing systems are insufficient for planning special operations. Specifically, existing systems lack sufficient processing speed and flexibility, storage capacity, growth potential, graphics (both on-screen and hard copy output), image processing and storage, and the ability to process combat planning folder data in a timely manner. They also lack near-real-time access to national/tactical level databases and the capability to update data in a timely fashion, and the means to effectively process the data during mission planning. The mobility, complexity, quantity, and lethality of enemy threats dictate automated data input and systems that can be interfaced via electronic communication systems throughout the Special Operations Forces (SOF).</p> <p>SOF Planning and Rehearsal System (SOFPARS) is an evolutionary acquisition program for developing an automated mission planning capability with automated interfaces to Command, Control, Communications, Computer and Intelligence Systems. SOFPARS will consist of a collection of automated mission planning hardware and software tools. Those tools include SOF enhancements to the Air Force Mission Support System's personal computer-based Portable Flight Planning Software (PFPS) and the future Joint Mission Planning System (JMPS).</p> <p>Current SOFPARS funding supports software development, hardware procurement, operational support, and emergent requirements to the air components (Air Force Special Operations Command and United States Army Special Operations Command) for basic mission planning and data loading to the following aircraft: AC-130H/U, AH/MH-6J/M, MC-130E/H/P, MH-47E/D, MH-53J/M, MH-60K/L, and CV-22. The Maritime Component (Naval Special Warfare Command) is currently funded as a separate program known as Special Warfare Automated Mission Planning System under the Navy's appropriation, except for O&amp;M beginning in FY 2003. Although the SOFPARS air platform effort will meet the joint requirement to ensure interoperability</p>									

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<p>across SOF and the services. SOFPARS will provide a timely mission critical planning/data transfer capability to the SOF ground, maritime and theater systems/forces. This would allow SOF commanders and operators to plan and respond quickly to missions of national importance, as well as day-to-day tasking and a multi-command-level planning capability at major SOF headquarters, theater headquarters, SOF forward operating bases and forward operating locations.</p> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>• (1.059) Continued to develop software interfaces to ensure system compatibility with service/component mission planning, rehearsal, and execution intel/ops systems environment. PFPS released 3.2. (2QTR01)</li> <li>• (0.463) Continued meeting deferred/future requirements and aircraft weapons/electronics enhancements and interfaces with joint systems. (1QTR01)</li> <li>• (0.818) Continued test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models. (1QTR01-2QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (1.468) Continue to develop software architecture interfaces to service/component mission planning, rehearsal, and execution systems environment. Planned PFPS release 3.3. (1QTR02-2QTR02)</li> <li>• (1.357) Continue meeting deferred requirements and aircraft weapons/electronics interfaces support for personal computer development and interface with joint systems. (1QTR02-2QTR02)</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7				R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350																									
<ul style="list-style-type: none"> <li>(1.859) Conduct the development and modification of automated tools to meet ground mission planning requirements. (1QTR02-4QTR02)</li> <li>(0.405) Continue test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models. (2QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>(0.845) Continue to develop software interfaces to ensure system compatibility with service/component mission planning, rehearsal, and execution intel/ops systems environment. Planned PFPS release 3.4. (2QTR03)</li> <li>(0.524) Continue meeting deferred/future requirements and aircraft weapons/electronics enhancements and interfaces with joint systems. (1QTR03)</li> <li>(0.420) Continue test and evaluation on core software, installable software modules, aircraft weapons/electronics, and flight performance models. (1QTR03)</li> </ul> <p style="margin-left: 40px;">B. <u>Other Program Funding Summary</u></p> <table style="width: 100%; margin-left: 40px;"> <thead> <tr> <th></th> <th><u>FY01</u></th> <th><u>FY02</u></th> <th><u>FY03</u></th> <th><u>FY04</u></th> <th><u>FY05</u></th> <th><u>FY06</u></th> <th><u>FY07</u></th> <th><u>To Complete</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, SOFPARS</td> <td>1.991</td> <td>1.448</td> <td>0.300</td> <td>0.297</td> <td>0.198</td> <td>0.692</td> <td>0.493</td> <td>Cont.</td> <td>Cont.</td> </tr> </tbody> </table>											<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	PROC, SOFPARS	1.991	1.448	0.300	0.297	0.198	0.692	0.493	Cont.	Cont.
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																				
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<p>C. <u>Acquisition Strategy:</u></p> <p>Develop mission planning software to support SOF operations leveraging ongoing personal computer-based efforts known as PFPS under the Air Force Mission Support System program and migration to the JMPS in the future year defense program. Integration of SOF specific requirements into PFPS along with maximum use of commercial off-the-shelf software technology and components reduces overall costs and schedule. Contract strategy combines various contracts and types to include competitively awarded cost plus time &amp; materials and sole source cost no fee (educational institution) contracts. Maximize use of state of the art commercial hardware technology procured via firm fixed price contract to take advantage of software portability and open system architecture. Focuses on platform specific software interface modules required to initialize and upload platform mission computers avionics systems through the use of electronic data transfer devices.</p>																																																																																																																												
<p>D. <u>Schedule Profile</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%;"></th> <th colspan="4" style="text-align: center; border-bottom: 1px solid black;">FY01</th> <th colspan="4" style="text-align: center; border-bottom: 1px solid black;">FY02</th> <th colspan="4" style="text-align: center; border-bottom: 1px solid black;">FY03</th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>Mission Planning Environment Software Suite</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    Portable Flight Planning System Releases</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>        3.2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>        3.3</td> <td></td><td></td><td></td><td></td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>        3.4 (USAF Program Build)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td style="text-align: center;">x</td> </tr> <tr> <td>Aircraft/Weapons &amp; Electronics Software Modules (one per Aircraft Avionics Type)</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>    Enhancements required to take advantage of new PFPS     Functionality</td> <td></td><td></td><td></td><td></td><td></td><td></td><td style="text-align: center;">x</td><td></td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td style="text-align: center;">x</td><td style="text-align: center;">x</td> </tr> </tbody> </table>									FY01				FY02				FY03					1	2	3	4	1	2	3	4	1	2	3	4	Mission Planning Environment Software Suite													Portable Flight Planning System Releases													3.2							x						3.3					x	x							3.4 (USAF Program Build)									x	x	x	x	Aircraft/Weapons & Electronics Software Modules (one per Aircraft Avionics Type)													Enhancements required to take advantage of new PFPS Functionality							x		x	x	x	x
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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S350							
		<u>FY01</u>		<u>FY02</u>		<u>FY03</u>			
		1	2	3	4	1	2	3	4
D. <u>Schedule Profile</u>									
Route Analysis Tool				x		x	x		
Mission Planning Module			x	x		x	x		
Development of Automated Tools						x	x	x	x

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Planning and Rehearsal System /S350							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Subtotal Product Dev											
Remarks:											
Development Support	C/CPFF	CAS, Huntsville, AL	1.061	0.463	Dec-00	0.516	Jan-02	0.524	Dec-02	Cont.	Cont.
	C/CPFF	LMFS, Owego, NY	7.629								7.629
	TBD	TBD				0.841	Jan-02			Cont.	Cont.
Software Dev/Integ	SS/CPFF	GTRI, Atlanta, GA	0.606	0.819	Mar-01	1.468	Feb-02	0.845	Feb-03	Cont.	Cont.
	T&M	Tybrin, Ft Walton Beach, FL	5.346								5.346
	TBD	TBD		0.240	Various	1.859	Various			Cont.	Cont.
Subtotal Spt			14.642	1.522		4.684		1.369		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Forces Planning and Rehearsal System /S350							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Developmental Test & Eval	MIPR	46th FTS, Hurlburt Field, FL	0.524	0.479	Dec-00	0.175	Feb-02	0.180	Dec-02	Cont.	Cont.
	SS/CPFF	ARINC, Annapolis, MD		0.339	Jan-01	0.230	Feb-02	0.240	Dec-02	Cont.	Cont.
	SS/CPFF	Salinas TECH, FL	0.017								0.017
Operational Test & Eval	MIPR	18th FTS, Hurlburt Field, FL	0.663							Cont.	Cont.
GFE	MIPR	Integrated Aviation Systems 21	0.279							Cont.	Cont.
		Working Group Ft Campbell, KY									
Subtotal T&E			1.483	0.818		0.405		0.420		Cont.	Cont.
Remarks:											
Contractor Engineering Spt	PO	CAS Inc, Huntsville, AL	4.206								4.206
Government Engineering Spt	ALLOT	AATD, Ft Eustis, VA	7.881								7.881
Travel	ALLOT	SOF PMO Ft Eustis, VA	0.070								0.070
Overhead	ALLOT	SOF PMO Ft Eustis, VA	0.092								0.092
Subtotal Management			12.249	0.000							12.249
Remarks:											
Total Cost			28.374	2.340		5.089		1.789		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S375						
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S375, Weapons and Support Systems Advanced Development	3.129	2.902	.252	.501	.498	.252	.858	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project provides for development and testing of specialized, lightweight individual weapons, fire control/surveillance devices, and combat equipment to meet the unique requirements of SOF. Special Operations Forces (SOF) often deploy as small, independent, quick reaction, foot-mobile teams independent of primary logistics support. Existing weapons and combat equipment are frequently unsuited to these conditions. Sub-projects include:</p> <ul style="list-style-type: none"> <li>• M4A1 Carbine SOF Accessory Kit. SOF variant of standard Army M4 Carbine (M4MOD). Allows mounting of optional accessories (up to 30 different functions/capabilities) such as day scopes, night scopes, active aiming laser module, visible lights, grenade launchers, suppressors, hand grips, and close quarters battle sights.</li> <li>• Modular Integrated Communications Helmet (MICH). MICH is a single integrated headgear system that provides ballistic, fragmentation, aural and impact protection while being night vision, communications and Nuclear, Biological and Chemical (NBC) equipment compatible. MICH incorporates a ballistic helmet and both a high and low noise communications system that allows operators to communication over the full spectrum of radios and intercoms inherent to SOF peculiar operations.</li> <li>• SOF Tactical Advanced Parachute System (SOFTAPS). SOFTAPS is a static line parachute system designed to provide operators with a dependable, reduced opening shock, and lower rate of decent steerable parachute capable of use in the full spectrum of SOF operating environments. SOFTAPS will replace all current MC1-1C and T-10 parachutes in the inventory. SOFTAPS will attempt to leverage technology and solutions from the Army Tactical Airborne Parachute System (TAPS).</li> </ul>									

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S375	
<ul style="list-style-type: none"> <li>• SOF Machine Gun (SMG). The SMG program will develop a compact, highly reliable, offensive/defensive 7.62MM weapon that will give operational units the capability to project a significant level of firepower without significantly impacting load-bearing constraints. The weapon will be capable of effectively engaging personnel and area targets at long ranges. This weapon will replace the current 7.62MM machine gun (MK-43) within the Naval Special Warfare (NSW) inventory.</li> <li>• SOF Personal Equipment Advanced Requirements (SPEAR) Lightweight Environmental Protection (LEP). SPEAR-LEP is a continuation of an on-going clothing insulation subsystem, which includes five garments designed to provide protection to -40 degrees Fahrenheit. LEP includes lightweight underwear, mid-weight underwear, medium weight stretch bib overalls, a pile jacket and wind resistant jacket. The system is designed to be individually configured based upon mission, terrain and climatic requirements. Follow-on Block II efforts include flame resistant capabilities designed specifically for SOF aviators.</li> </ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>• (2.467) M4 MOD. M4MOD RDT&amp;E was used to test several items for follow-on procurement. This included testing of various thermal and enhanced day optics, baseline reliability fixes to the existing M4A1 Carbine, solicitations for/testing of both a day/night combat optic for the M203 Grenade Launcher as well as testing for a pocket scope mount which allows currently fielded night vision optics and existing SOPMOD equipment to work together for an enhanced low light engagement capability. (1QTR01-4QTR01)</li> <li>• (0.121) MICH. MICH RDT&amp;E was used to fund both the developmental and operational testing of the MICH helmet. The MICH is currently being fielded. (1QTR01)</li> <li>• (0.441) SPEAR LEP. SPEAR-LEP RDT&amp;E was used to explore advances in fire retardant materials which can be used by aviators assigned to both AFSOC and USASOC. This included efforts working with Nomex and Gortex materials that can provide this capability. (2QTR01)</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S375	
<ul style="list-style-type: none"> <li>(0.100) SMG. SMG RDT&amp;E was used to begin examination of existing machine guns to determine if current models would meet the mission requirements of NSW. A 7.62MM machine gun is required to replace the aging MK-43. (4QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>(1.500) M4MOD. Funding will be used in the development of a Family of Muzzle Break suppressors, a Close Quarter Combat Receiver, improvements to the current M4A1 Carbine, the Enhanced Grenade Launcher Module, and the Miniature Day/Night sight. (1QTR02-4QTR02)</li> <li>(0.402) SOFTAPS. SOFTAPS RDT&amp;E will be used to leverage technology from the Army's steerable Army Tactical Advanced Parachute System development. (4QTR02)</li> <li>(1.000) Titanium Tilting Helmet Mounts (TTHM). Funding will be used in the development of a Titanium Tilting Helmet Mount. (4QTR02)</li> </ul> <p>DEFENSE EMERGENCY RESPONSE FUND (DERF) PLAN:</p> <ul style="list-style-type: none"> <li>(0.780) Special Purpose Receiver-Variant (SPR-V). Funds the development of a SPR-V that uses existing Kalashnikov magazines and Soviet Bloc 7.62X3.9MM ammunition while retaining the characteristics of the M4A1 and remaining compatible with SOPMOD components. (1QTR02)</li> <li>(0.429) Man-Portable Decontamination. Funds decontamination testing analysis/protocol development and report, live agent testing/safety certification, materials testing, and test articles. (2QTR02)</li> </ul>		

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY			Special Operations Tactical Systems Development/PE1160404BB								
RDT&E DEFENSE-WIDE / 7			Weapons Systems Advance Development/S375								
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Hardware Dev											
M4MOD	Various	NSWC-Crane, Crane, IN	0.810	1.637	Various	1.162	Various	0.169	Various	Cont.	Cont.
MICH	FFP	Natick Soldier Center, Natick, MA	0.211	0.080	Dec-01					Cont.	Cont.
SPEAR	FFP	Natick Soldier Center, Natick, MA	2.715	0.290	Aug-01					Cont.	Cont.
SMG	Various	NSWC-Crane, Crane, IN		0.067	Aug-01					Cont.	Cont.
SOFTAPS	FFP	Natick Soldier Center, Natick, MA				0.263	Aug-02			Cont.	Cont.
Titanium Tilting Helmet Mounts						0.775	Sep-02				
Subtotal Product Dev			3.736	2.074		2.200		0.169		Cont.	Cont.
Remarks: DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN				0.592	Nov-01				0.592
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG				0.326	Jan-02				0.326
Development Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.049	0.090	Various	0.054	Various	0.009	Various	Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.013	0.004	Dec-00					Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.165	0.016	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.004	Aug-01					Cont.	Cont.
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.015	Aug-02			Cont.	Cont.
Titanium Tilting Helmet Mounts						0.036	Sep-02				
Intregated Logistics Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.012	0.035	Various	0.022	Various	0.004	Various	Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.003	0.002	Dec-00					Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.041	0.006	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.001	Aug-01					Cont.	Cont.
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.006	Aug-02			Cont.	Cont.
Titanium Tilting Helmet Mounts						0.014	Sep-02				
Configuration Mgmt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.025	0.048	Various	0.029	Various	0.005	Various	Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.006	0.002	Dec-00					Cont.	Cont.
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.082	0.009	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.002	Aug-01					Cont.	Cont.

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APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Weapons Systems Advance Development/S375							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Development Spt (Cont)											
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.008	Aug-02			Cont.	Cont.
Titanium Tilting Helmet Mounts						0.020	Sep-02				0.020
Subtotal Spt			0.396	0.219		0.204		0.018		Cont.	Cont.
Remarks: DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN				0.055	Nov-01				0.055
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG				0.030	Jan-02				0.030
Developmental Test											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.061	0.122	Various	0.074	Various	0.038	Various	Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.016	0.006	Dec-00						0.022
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.206	0.022	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.005	Aug-01						0.005
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.015	Aug-02				0.015
Titanium Tilting Helmet Mounts						0.050	Sep-02				0.050
Operational Test											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.123	0.237	Various					Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.032	0.012	Mar-01						0.044
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.411	0.044	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.009	Aug-01						0.009
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.029	Aug-02				0.029
Subtotal T & E			0.849	0.457		0.168		0.038		Cont.	Cont.
Remarks: DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN				0.045	Nov-01				0.045
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG				0.025	Jan-02				0.025
Government Eng Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.025	0.054	Various	0.033	Various	0.006	Various	Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.006	0.003	Dec-00						0.009
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.082	0.010	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.002	Aug-01						0.002
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.012	Aug-02				0.012

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APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Weapons Systems Advance Development/S375							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Government Eng Spt (Cont)											
Titanium Tilting Helmet Mounts						0.022	Sep-02				0.022
Program Mgmt Spt											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.086	0.176	Various	0.107	Various	0.014	Various	Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.022	0.009	Dec-00						0.031
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.288	0.032	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.007	Aug-01						0.007
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.039	Aug-02				0.039
Titanium Tilting Helmet Mounts						0.072	Sep-02				0.072
Travel											
M4MOD	ALLOT	NSWC-Crane, Crane, IN	0.037	0.068	Various	0.018	Various	0.007	Various	Cont.	Cont.
MICH	ALLOT	Natick Soldier Center, Natick, MA	0.011	0.003	Dec-00						0.014
SPEAR	ALLOT	Natick Soldier Center, Natick, MA	0.123	0.012	Mar-01					Cont.	Cont.
SMG	ALLOT	NSWC-Crane, Crane, IN		0.003	Aug-01						0.003
SOFTAPS	ALLOT	Natick Soldier Center, Natick, MA				0.015	Aug-02				0.015
Titanium Tilting Helmet Mounts						0.012	Sep-02				0.012
Subtotal Management			0.680	0.379		0.330		0.027		Cont.	Cont.
Remarks: DERF Funds:											
SPR	FFP	NSWC-Crane, Crane, IN				0.088	Nov-01				0.088
Decontamination	FFP	Odenwald-Were, Ritterbach, FRG				0.048	Jan-02				0.048
Total Cost			5.661	3.129		2.902		0.252		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800						
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S800, Special Operations Munitions Advanced Development	9.648	3.000	1.830	1.284	1.956	1.547	2.076	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project provides for the acquisition of selected, specialized munitions and equipment to meet unique Special Operations Forces (SOF) requirements. This is a continuing program. Sub-projects include:</p> <ul style="list-style-type: none"> <li>• SOF Demolition Kit (SOFDK). The kit consists of inert hardware sets for Explosively Formed Penetrators (EFP), conical shaped charges and linear shaped charges, along with tools, equipment, and attachment devices for constructing and emplacing a variety of demolition charges. The kit allows the SOF operator to tailor the demolition charges to the target providing greater lethality and mission flexibility.</li> <li>• Improved Limpet Mine (ILM). The ILM was being developed to replace the existing limpet assembly modular. The ILM was required for sea, air, land delivery vehicle attacks against ships, submarines, nested patrol craft, submerged harbor facilities, and various other maritime targets. The ILM would have provided greater explosive weight to be delivered to the target, decreased time-on-target by improved handling procedures, and resulted in an enhanced probability of mission success. However, development efforts did not yield a materiel solution; therefore, the current effort was terminated. The requirement remains valid.</li> <li>• Time Delay Firing Device(TDFD)/Sympathetic Detonator (SYDET). Provides the SOF operator command and control of hand-emplaced munitions (i.e., influence when and how munitions will be initiated). Capability provided includes time delay or sympathetic initiation (acoustic recognition) of munitions without the use of primary explosives during tactical operations. The elimination of primary explosives is a quantum leap in the safety and reliability of initiation devices.</li> </ul>									

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800	
<p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>• (3.601) SOFDK. Continued design, fabrication and testing of several Pre-Planned Product Improvement (P3I) warheads. Conducted MS C for the extra-large EFP. (1QTR01-4QTR01)</li> <li>• (0.050) ILM. Completed contract closeout and program termination. (2QTR01-4QTR01)</li> <li>• (5.997) TDFD/SYDET. Conducted MS B decision review. Performed Engineering and Manufacturing Development (EMD) for the land variant of TDFD/SYDET. (2QTR01-4QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (0.814) SOFDK. Continue design, fabrication, and testing of P3I warheads and kit items. Update acquisition documents and complete MS C for explosive cable cutters, the medium EFP, and fence piercing tandem EFP. (1QTR02-4QTR02)</li> <li>• (2.186) TDFD/SYDET. Complete EMD and subsystem testing/system integration testing on the land variant of TDFD/SYDET; conduct MS C. (1QTR02-4QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>• (0.830) SOFDK. Begin EMD and testing on multi-fragmenting EFP, update acquisition documents, staff MS C package, and prepare for materiel release. (1QTR03-3QTR03)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002																								
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800																										
<ul style="list-style-type: none"> <li>(1.000) TDFD/SYDET. Begin EMD and testing on the sea variant of TDFD/SYDET. (1QTR03-4QTR03)</li> </ul> <p>B. <u>Other Program Funding Summary</u></p> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 8%; text-align: center;"><u>FY01</u></th> <th style="width: 8%; text-align: center;"><u>FY02</u></th> <th style="width: 8%; text-align: center;"><u>FY03</u></th> <th style="width: 8%; text-align: center;"><u>FY04</u></th> <th style="width: 8%; text-align: center;"><u>FY05</u></th> <th style="width: 8%; text-align: center;"><u>FY06</u></th> <th style="width: 8%; text-align: center;"><u>FY07</u></th> <th style="width: 8%; text-align: center;"><u>To Complete</u></th> <th style="width: 8%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, Ordnance Acquisition</td> <td style="text-align: center;">23.539</td> <td style="text-align: center;">9.035</td> <td style="text-align: center;">7.078</td> <td style="text-align: center;">10.139</td> <td style="text-align: center;">8.930</td> <td style="text-align: center;">13.507</td> <td style="text-align: center;">10.802</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> </tbody> </table> <p>C. <u>Acquisition Strategy:</u></p> <ul style="list-style-type: none"> <li>SOFDK. Program managed by Office of Project Manager for Mines, Countermines and Demolitions (PM-MCD). Designs developed by Army research and development centers are currently in production and are being managed under an evolutionary acquisition strategy.</li> <li>TDFD/SYDET. Program managed by PM-MCD. Designs and prototypes will be developed by Army research and development centers. Contract strategy is a competitive cost-plus contract. This program will be managed under an evolutionary acquisition strategy.</li> </ul>											<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	PROC, Ordnance Acquisition	23.539	9.035	7.078	10.139	8.930	13.507	10.802	Cont.	Cont.
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																				
PROC, Ordnance Acquisition	23.539	9.035	7.078	10.139	8.930	13.507	10.802	Cont.	Cont.																				

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)								DATE FEBRUARY 2002							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7				R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project S800											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Munitions Advanced Development/S800							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Primary Hardware Dev											
DK	FFP	PM-MCD, Picatinny, NJ		3.007	Various	0.469	Various	0.470	Various	Cont.	Cont.
TDFD/SYDET	CPFF	ARL, Picatinny, NJ		4.020	Various	0.930	Various	0.580	Various	Cont.	Cont.
Subtotal Product Dev			34.215	7.027		1.399		1.050		Cont.	Cont.
Remarks:											
Development Spt											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.075	Various	0.050	Various	0.050	Various	Cont.	Cont.
ILM	ALLOT	NAVSEA, WASH, DC		0.050	Various						0.050
Training Development											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.256	Various	0.080	Various	0.050	Various	Cont.	Cont.
Integrated Logistics Support											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.100	Various	0.100	Various	0.100	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.105	Various	0.100	Various	0.075	Various	Cont.	Cont.
Configuration Management											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.011	Various	0.025	Various	0.025	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.025	Various	0.025	Various	0.020	Various	Cont.	Cont.
Technical Data											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.011	Various	0.020	Various	0.020	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.075	Various	0.050	Various	0.035	Various	Cont.	Cont.
Subtotal Spt			7.811	0.708		0.450		0.375		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Munitions Advanced Development/S800							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Developmental Test & Eval											
DK	ALLOT	PM-MCD, Picatinny, NJ						0.080	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.500	Various	0.300	Various	0.020	Various	Cont.	Cont.
Operational Test & Eval											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.395	Various	0.100	Various	0.035	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.226	Various	0.200	Various	0.035	Various	Cont.	Cont.
Subtotal T&E			10.782	1.121		0.600		0.170		Cont.	Cont.
Remarks:											
Contractor Engineering Spt											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.280	Various	0.100	Various	0.035	Various	Cont.	Cont.
Government Engineering Spt											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.075	Various	0.050	Various	0.035	Various	Cont.	Cont.
Program Management Spt											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.063	Various	0.075	Various	0.075	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.300	Various	0.250	Various	0.050	Various	Cont.	Cont.
Travel											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.014	Various	0.025	Various	0.025	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.060	Various	0.051	Various	0.015	Various	Cont.	Cont.
Subtotal Management			7.225	0.792		0.551		0.235		Cont.	Cont.
Remarks:											
Total Cost			60.033	9.648		3.000		1.830		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)						DATE FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100								
COST (Dollars in Millions)			FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
SF100, Aviation Systems Advanced Development			22.646	35.926	49.015	39.964	46.729	48.378	43.728	Cont.	Cont.
<p>A. <u>Mission Description and Budget Item Justification</u></p> <p>This project investigates the applicability of current and maturing technologies that have great potential for direct application to the development and procurement of specialized equipment to meet Special Operations Forces (SOF)-unique aviation requirements. Timely application of SOF-unique technology is critical and necessary to meet requirements in such areas as: Low Probability of Intercept/Low Probability of Detection (LPI/LPD) radios and radar; LPI formation/rendezvous flight; digital terrain elevation data and electronic order of battle; digital maps; LPI radar altimeter; display technology; situational awareness; near-real-time intelligence to include data fusion; laser radar/millimeter wave radar obstacle avoidance; imagery; threat detection and avoidance; electronic support measures for threat geolocation and specific emitter identification; navigation; target detection and identification technologies; aerial refueling; and studies for future SOF aircraft requirements. Sub-projects include:</p> <ul style="list-style-type: none"> <li>AC-130U Pre-Planned Product Improvement (P3I). Provides correction of system deficiencies and enhancement of mission capabilities for 13 AC-130U Gunships.</li> <li>Aviation Engineering Analysis. Provides a rapid response capability to support SOF fixed-wing aircraft. The purpose is to correct systems deficiencies, improve asset life, and enhance mission capability through the means of feasibility studies and engineering analyses. This sub-project provides the engineering required to improve the design and performance integrity of the aircraft support systems, sub-systems equipment, and embedded computer software as they relate to the maintenance, overhaul, repair, quality assurance, modifications, material improvements and service life extensions.</li> </ul>											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100	
<ul style="list-style-type: none"> <li>MC-130H Aerial Refueling. This program extends the range of vertical lift aircraft operating in politically sensitive/denied airspace through the use of MC-130H as a penetrating tanker aircraft. Integrates the air refueling system and necessary accessories into the MC-130H 1553 data bus. Elements of the air refueling system includes enlarged paratroop door windows and non-developmental item aerial refueling pods.</li> <li>Common Avionics Architecture for Penetration (CAAP). This program initiates development of terrain following/terrain avoidance radar having LPI/LPD characteristics, and it initiates development of an enhanced situational awareness system which consolidates threat data from on and off-board sensors into a single coherent image to the crew, to include software development for electronic warfare data bus to coordinate on-board defensive system response to threats.</li> <li>Leading Edge Technology. This program is directed toward improving near real time intelligence on SOF aircraft. This program will mature technologies enabling exploitation of vibroacoustic signatures relating to targets or tracking of friendly forces.</li> <li>Autonomous Landing Guidance System (ALGS). This program is directed toward development of aircraft systems permitting landing in near zero visibility weather conditions without the aid of land based navigation systems.</li> </ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>(0.263) AC-130U P3I. Completed government tests on the ALR-69 upgrade to validate the redesigned cable and to verify that the system operated within system parameters. (2QTR01)</li> <li>(0.474) Aviation Engineering Analysis. Continued engineering analysis of SOF fixed wing aircraft avionics and sensors. (1QTR01-4QTR01)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100	
<ul style="list-style-type: none"> <li>• (9.823) CAAP. Continued prototyping of complex waveform modification into off-the-shelf airborne radar. Initiated CAAP Terrain Following/Terrain Avoidance (TF/TA) and Enhanced Situational Awareness (ESA) development under the US Air Force C-130 Avionics Modernization Program (AMP). (1QTR01-4QTR01)</li> <li>• (4.809) MC-130H Aerial Refueling. Started Engineering &amp; Manufacturing Development of hardware/software, integration and test to support formalization and procurement of one set of pods. (4QTR01)</li> <li>• (2.911) Leading Edge Technology. Conducted demonstration of several technologies providing near real time intelligence to aircrews. Technologies include Coherent Change Detection (CCD), Vibro Electronic Signature Target Analysis (VESTA) and Passive Acoustic Reflection Device (PARD) with Enhanced Digital Geodata Environment (EDGE). (4QTR01)</li> <li>• (4.366) Autonomous Landing Guidance System (ALGS). Conducted a series of studies on autonomous landing guidance technology to include the ability of millimeter wave radar to meet enhanced vision systems requirements. (4QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (0.490) Aviation Engineering Analysis. Continue engineering analysis of SOF fixed wing aircraft avionics and sensors. (1QTR02-4QTR02)</li> <li>• (24.276) CAAP. Complete prototyping and conduct a ground demonstration of complex waveform modifications to an off-the-shelf airborne radar. Incorporate production of complex waveform modification. Conduct demonstration of vertical lift mission processor with CAAP functionality and time/space partitioning. Continue TF/TA and ESA development under the US Air Force AMP. (1QTR02-4QTR02)</li> <li>• (6.860) MC-130H Aerial Refueling. Continue Engineering &amp; Manufacturing Development; integration of aerial refueling system, aircraft plumbing and fuel tanks; and ground testing. Initiate trial install and flight test. (1QTR02)</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100	
<ul style="list-style-type: none"> <li>• (4.300) Leading Edge Technology. Explore and demonstrate the suitability of the integration of CCD, VESTA, PARD, and EDGE visualization technology on-board the AC-130U Gunship. (2QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>• (1.958) AC-130U P3I. Initiate APQ-180 Radar improvements to include identifying reliability and maintainability problems and implement corrections, incorporate deficiency report corrections and update test program sets. (1QTR03)</li> <li>• (19.031) CAAP. Continue TF/TA and ESA development under the US Air Force AMP contract. Specific CAAP activities scheduled for completion under this contract for FY03 are: C-130 CAAP Risk Reduction effort and Critical Design Review for the MC-130H Combat Talon II aircraft. (1QTR03-4QTR03)</li> <li>• (9.000) CAAP On-Board ESA. Initiate development of below line-of-sight ESA. Initiates engineering analysis and development of special receiver technology for ESA. (1QTR-4QTR03)</li> <li>• (18.537) MC-130H Aerial Refueling. Complete Engineering &amp; Manufacturing Development activities. (1QTR03)</li> <li>• (0.489) Aviation Engineering Analysis. Continue engineering analysis of SOF fixed wing aircraft avionics and sensors. (1QTR03-4QTR03)</li> </ul>		

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100																										
<p><b>B. <u>Other Program Funding Summary</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 8%; text-align: center;"><u>FY01</u></th> <th style="width: 8%; text-align: center;"><u>FY02</u></th> <th style="width: 8%; text-align: center;"><u>FY03</u></th> <th style="width: 8%; text-align: center;"><u>FY04</u></th> <th style="width: 8%; text-align: center;"><u>FY05</u></th> <th style="width: 8%; text-align: center;"><u>FY06</u></th> <th style="width: 8%; text-align: center;"><u>FY07</u></th> <th style="width: 8%; text-align: center;"><u>To Complete</u></th> <th style="width: 8%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, C-130 Mods'</td> <td style="text-align: center;">28.286</td> <td style="text-align: center;">2.339</td> <td style="text-align: center;">3.249</td> <td style="text-align: center;">25.896</td> <td style="text-align: center;">70.939</td> <td style="text-align: center;">54.242</td> <td style="text-align: center;">35.107</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> </tbody> </table> <p>Includes C-130 Modifications sub-line item funds for AC-130H Web Seats, Image Transfer Sys, Control Display Unit Upgrade, Night Vision Imaging Sys, Aircrew Info Mapping Sys, Pitot Static Boom Replacement, Oxygen Regulators and AVQ-19 Replacement System, AC-130U Comm Upgrade, Covert Laser Illuminator Assembly, Selectable Laser Illuminator Beam, Reduced Drag/Weight Reduction, ALR-69/ALQ-172 Antennas, AC-130U P3I, Radar Maintainability, ACP3I for Radar APG63V1, MC-130E/P Sustainment, MC-130H Auxiliary Power Unit Upgrade, AC-130H Low Light Level TV, and MC-130 Aerial Refueling Capability.</p> <p><b>C. <u>Acquisition Strategy:</u></b></p> <ul style="list-style-type: none"> <li>AC-130U P3I, All Light Level Television laser beam shaping. Maximize use of nondevelopmental laser technology to integrate improvements to the laser illuminator. Use Integrated Weapon System Support Program contract.</li> <li>CAAP. Develop a common technical solution satisfying fixed and rotary wing requirements for penetration missions. The program will leverage knowledge gained on previously conducted advanced technology demonstrations to implement a low risk solution. The fixed wing application of CAAP will be accomplished by merging with the USAF C-130 Avionics Modernization Program. Optimal integration for vertical lift application is under investigation and will be implemented separately. USAF funds will pay for the majority of production items.</li> </ul>											<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	PROC, C-130 Mods'	28.286	2.339	3.249	25.896	70.939	54.242	35.107	Cont.	Cont.
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																				
PROC, C-130 Mods'	28.286	2.339	3.249	25.896	70.939	54.242	35.107	Cont.	Cont.																				

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APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF100								
<ul style="list-style-type: none"> <li>MC-130H Aerial Refueling. Maximize use of nondevelopmental item technology to develop, design, build and test an integrated aerial refueling system via Integrated Weapon System Support Program contract. The first phase of this program is Foreign Comparative Testing (FCT) of the MK 32B-902E Aerial Refueling POD. The FCT contract includes options to support engineering, manufacturing and development and production installs.</li> </ul>													
					<u>FY01</u>		<u>FY02</u>		<u>FY03</u>				
D. <u>Schedule Profile</u>					1	2	3	4	1	2	3	4	
AC-130 P3I					x	x	x	x			x	x	x
MC-130H Aerial Refueling Development Contract Award (Phase II)								x					
MC-130H Aerial Refueling Development/Integration/Test (Phase I & II)					x	x	x	x	x	x	x	x	
C-130 CAAP/USAF AMP Contract Award								x					
Development/Test								x	x	x	x	x	
Leading Edge Technology Contract Award								x					
ALGS Contract Award								x					

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Aviation Systems Advance Development/SF100							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/ Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Primary Hardware Development											
CAAP	C/CPAF	Boeing, Long Beach, CA	4.168	9.722	Jul-01	23.312	Various	18.015	Various	Cont.	Cont.
Award Fees				0.101	Dec-01	0.964	Dec-02	1.016	Dec-03	Cont.	Cont.
MC-130 Air Ref (P3I)	C/CPFF(AF)	Boeing, Ft. Walton Beach, FL	0.765	4.809	Aug-01	6.860	Nov-01	18.537	Nov-02		30.971
Leading Edge Technology	Allot	SPAWAR, Charleston, SC		2.911	Sep-01	4.300	Mar-02				7.211
ALGS	Allot	Hanscom AFB, MA		4.366	Jul-01						4.366
CAAP ESA	TBD	TBD						9.000	Various	78.000	87.000
Subtotal Product Dev			4.933	21.909		35.436		46.568		Cont.	Cont.
Remarks:											
Development Support											
Analyses/Technical Studies	Various	Various	0.847	0.474	Various	0.490	Various	0.489	Various	Cont.	Cont.
Engineering/Studies											
AC-130U Gunship	Various	Various	4.522	0.263	Various			1.958	Various	Cont.	Cont.
MC-130H Air Refueling	MIPR	46TH TW, Hurlburt Fld, FL	0.300								0.300
ALE-47	SS/FFP	Boeing	0.200								0.200
Subtotal Spt			5.869	0.737		0.490		2.447		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Aviation Systems Advance Development/SF100							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/ Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Developmental Test & Evaluation											
Subtotal T&E											
Remarks:											
Support											
Subtotal Management											
Remarks:											
Total Cost			10.802	22.646		35.926		49.015		Cont.	Cont.
Remarks:											

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002				
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF200							
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
SF200, CV-22	40.224	101.661	62.807	50.843	35.562	0	0	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project provides capabilities necessary to meet Special Operations Forces (SOF) operational requirements. The CV-22 acquisition program delayed the incorporation of some operational capabilities until the completion of a block 10 (formerly Pre-Planned Product Improvement) CV-22 program. This strategy was based on a developmental funding cap agreed to by the Department of the Navy and the USSOCOM Acquisition Executive and concerns over the technical maturity of parallel acquisition programs. Block 10 consists of integrating Directional Infrared Countermeasures (DIRCM), Troop Commander situational awareness connections, ALE-47 control relocation, 2<sup>nd</sup> forward firing chaff and flare dispenser, and Dual Digital Map.

## FY 2001 ACCOMPLISHMENTS:

- (29.758) Continued development of block 10 changes. (1QTR01-3QTR01)
- (2.887) Continued program office support and government engineering effort for block 10 program. (1QTR01-3QTR01)
- (1.767) Provided risk reduction for Suite of Integrated Radio Frequency Countermeasures, CV-22 Joint Avionics System Software integration, and cost reduction initiatives for procurement and sustainment. (1QTR01-3QTR01)
- (5.812) Began development of Low Probability of Intercept/Low Probability of Detection Radar. (4QTR01)

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF200	
<p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (82.940) Continue development/integration/testing of block 10 program—Cost Plus Award Fee (CPAF). Effort includes integration and testing of the DIRCM program to provide protection against infrared guided missiles; design and integration of the Troop Commander Situational Awareness station to provide the embarked troop commander access to the CV-22's communication, navigation and mission management system; relocation of the ALE-47 control head to allow any cockpit crewmember to activate defensive countermeasures; addition of a second forward-firing chaff and flare dispenser to provide an adequate quantity of consumable countermeasures for the extended duration of SOF infiltration/exfiltration missions; and the incorporation of a dual access feature to the Digital Map System to allow both the pilot and co-pilot to independently access and control the digital map display from the mission computer. (2QTR02)</li> <li>• (0.770) Continue program office support for block 10 program. (1QTR02-4QTR02)</li> <li>• (5.500) Edwards AFB test infrastructure, including spares. (1QTR02-4QTR02)</li> <li>• (7.150) Engineering and logistics support for block 10 program. (1QTR02)</li> <li>• (5.301) Continue development of DIRCM laser integration for CV-22. (1QTR02-4QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>• (53.575) Continue development/integration/testing of block 10 program – CPAF. Continue integration and testing of the DIRCM program to provide protection against infrared guided missiles; design and integration of the Troop Commander Situational Awareness station to provide the embarked troop commander access to the CV-22's communication, navigation and mission management system; relocation of the ALE-47 control head to allow any cockpit crewmember to activate defensive countermeasures; addition of a second forward-firing chaff and flare dispenser to provide an adequate</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)				DATE FEBRUARY 2002																							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF200																								
<p>quantity of consumable countermeasures for the extended duration of SOF infiltration/exfiltration missions; and the incorporation of a dual access feature to the Digital Map System to allow both the pilot and co-pilot to independently access and control the digital map display from the mission computer. (2QTR03)</p> <ul style="list-style-type: none"> <li>• (0.700) Continue program office support for block 10 program. (1QTR03-4QTR03)</li> <li>• (8.532) NAVAIR engineering and logistics support for block 10 program. (1QTR03)</li> </ul> <p>B. <u>Other Program Funding Summary</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY01</u></th> <th style="text-align: center;"><u>FY02</u></th> <th style="text-align: center;"><u>FY03</u></th> <th style="text-align: center;"><u>FY04</u></th> <th style="text-align: center;"><u>FY05</u></th> <th style="text-align: center;"><u>FY06</u></th> <th style="text-align: center;"><u>FY07</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, CV-22 SOF Osprey</td> <td style="text-align: right;">8.229</td> <td style="text-align: right;">18.202</td> <td style="text-align: right;">58.540</td> <td style="text-align: right;">118.665</td> <td style="text-align: right;">142.461</td> <td style="text-align: right;">184.761</td> <td style="text-align: right;">199.361</td> <td style="text-align: right;">837.960</td> <td style="text-align: right;">1568.179</td> </tr> </tbody> </table> <p>C. <u>Acquisition Strategy:</u></p> <ul style="list-style-type: none"> <li>• The CV-22 program is managed through the Navy V-22 program office (NAVAIR PMA-275). This ensures that the CV-22 changes are incorporated into the ongoing V-22 production line with minimum impact. RDT&amp;E funding is being sent from USSOCOM to PMA-275 to place on contract with the V-22 prime contractor, and began in FY00. The RDT&amp;E funding described will be used to fund block 10 (formerly Pre-Planned Product Improvement) development. Block 10 capability is required for full compliance with the Joint Operational Requirements Document. Funding for the baseline CV-22 Engineering Manufacturing and Development, known as block 0, is embedded in the Navy budget.</li> </ul>									<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	PROC, CV-22 SOF Osprey	8.229	18.202	58.540	118.665	142.461	184.761	199.361	837.960	1568.179
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																		
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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160404BB Special Operations Tactical Systems Development / Project SF200							
					<u>FY01</u>		<u>FY02</u>		<u>FY03</u>			
					1	2	3	4	1	2	3	4
D. <u>Schedule Profile</u>												
Block 0 Development					x	x	x	x	x	x	x	x
Block 10 Development					x	x	x	x	x	x	x	x

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Munitions Advanced Development/S800							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Primary Hardware Dev											
DK	FFP	PM-MCD, Picatinny, NJ		3.007	Various	0.469	Various	0.470	Various	Cont.	Cont.
TDFD/SYDET	CPFF	ARL, Picatinny, NJ		4.020	Various	0.930	Various	0.580	Various	Cont.	Cont.
Subtotal Product Dev			34.215	7.027		1.399		1.050		Cont.	Cont.
Remarks:											
Development Spt											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.075	Various	0.050	Various	0.050	Various	Cont.	Cont.
ILM	ALLOT	NAVSEA, WASH, DC		0.050	Various						0.050
Training Development											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.256	Various	0.080	Various	0.050	Various	Cont.	Cont.
Integrated Logistics Support											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.100	Various	0.100	Various	0.100	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.105	Various	0.100	Various	0.075	Various	Cont.	Cont.
Configuration Management											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.011	Various	0.025	Various	0.025	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.025	Various	0.025	Various	0.020	Various	Cont.	Cont.
Technical Data											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.011	Various	0.020	Various	0.020	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.075	Various	0.050	Various	0.035	Various	Cont.	Cont.
Subtotal Spt			7.811	0.708		0.450		0.375		Cont.	Cont.
Remarks:											

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Exhibit R-3 COST ANALYSIS						DATE: FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY				Special Operations Tactical Systems Development/PE1160404BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Munitions Advanced Development/S800							
Actual or Budget Value (\$ in millions)											
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	Budget Cost FY01	Award Date FY01	Budget Cost FY02	Award Date FY02	Budget Cost FY03	Award Date FY03	To Complete	Total Program
Developmental Test & Eval											
DK	ALLOT	PM-MCD, Picatinny, NJ						0.080	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.500	Various	0.300	Various	0.020	Various	Cont.	Cont.
Operational Test & Eval											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.395	Various	0.100	Various	0.035	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.226	Various	0.200	Various	0.035	Various	Cont.	Cont.
Subtotal T&E			10.782	1.121		0.600		0.170		Cont.	Cont.
Remarks:											
Contractor Engineering Spt											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.280	Various	0.100	Various	0.035	Various	Cont.	Cont.
Government Engineering Spt											
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.075	Various	0.050	Various	0.035	Various	Cont.	Cont.
Program Management Spt											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.063	Various	0.075	Various	0.075	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.300	Various	0.250	Various	0.050	Various	Cont.	Cont.
Travel											
DK	ALLOT	PM-MCD, Picatinny, NJ		0.014	Various	0.025	Various	0.025	Various	Cont.	Cont.
TDFD/SYDET	ALLOT	PM-MCD, Picatinny, NJ		0.060	Various	0.051	Various	0.015	Various	Cont.	Cont.
Subtotal Management			7.225	0.792		0.551		0.235		Cont.	Cont.
Remarks:											
Total Cost			60.033	9.648		3.000		1.830		Cont.	Cont.
Remarks:											

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE FEBRUARY 2002			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE PE1160405BB Spec Operations Intelligence Systems Development						
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
PE1160405BB	6.968	14.989	1.590	6.063	5.706	3.571	1.636	Cont.	Cont.
S400 SO INTELLIGENCE	6.968	14.989	1.590	6.063	5.706	3.571	1.636	Cont.	Cont.

**A. Mission Description and Budget Item Justification**

This program element provides for the identification, development, and testing of Special Operations Forces (SOF) intelligence equipment to identify and eliminate deficiencies in providing timely intelligence to deployed forces. The following distinct sub-projects address the primary areas of intelligence dissemination, sensor systems, integrated threat warning to SOF mission platforms, and tactical exploitation of national system capabilities. USSOCOM has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities into the 21st century. USSOCOM's C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture will employ the latest standards and technology by transitioning from separate systems to full integration with the infosphere. The infosphere will allow SOF elements to operate with any force combination in multiple environments. The C4I programs funded in this project are grouped by the level of organizational element they support: Operational Element (Team), Above Operational Element (Deployed), and Above Operational Element (Garrison).

**Change Summary Explanation:**

**Funding:**

- This program element received \$3.180 million of FY 2002 Defense Emergency Response Funds for the Special Operations Joint Interagency Collaborative Cell.
- FY 2002 Congressional Actions:
  - Joint Threat Warning System (\$3.8 million)
  - Counterproliferation Analysis and Planning System (\$5.1 million)
  - Solid-State Synthetic Aperture Radar (\$3 million)

**Schedule:** None.

**Technical:** None.



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2002																					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE PE1160405BB Spec Operations Intelligence Systems Development																						
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;">B. Program Change Summary</th> <th style="text-align: right; width: 12.5%;">FY 2001</th> <th style="text-align: right; width: 12.5%;">FY 2002</th> <th style="text-align: right; width: 12.5%;">FY 2003</th> </tr> </thead> <tbody> <tr> <td>Previous President's Budget</td> <td style="text-align: right;">7.790</td> <td style="text-align: right;">3.089</td> <td style="text-align: right;">2.707</td> </tr> <tr> <td>Appropriated Value</td> <td style="text-align: right;">8.022</td> <td style="text-align: right;">14.989</td> <td></td> </tr> <tr> <td>Adjustments to Appropriated Value / President's Budget</td> <td style="text-align: right;">(1.054)</td> <td></td> <td style="text-align: right;">(1.117)</td> </tr> <tr> <td>Current Budget Submit</td> <td style="text-align: right;">6.968</td> <td style="text-align: right;">14.989</td> <td style="text-align: right;">1.590</td> </tr> </tbody> </table>				B. Program Change Summary	FY 2001	FY 2002	FY 2003	Previous President's Budget	7.790	3.089	2.707	Appropriated Value	8.022	14.989		Adjustments to Appropriated Value / President's Budget	(1.054)		(1.117)	Current Budget Submit	6.968	14.989	1.590
B. Program Change Summary	FY 2001	FY 2002	FY 2003																				
Previous President's Budget	7.790	3.089	2.707																				
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Current Budget Submit	6.968	14.989	1.590																				

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE  FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400								
COST (Dollars in Millions)			FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S400, Special Operations Intelligence			6.968	14.989	1.590	6.063	5.706	3.571	1.636	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project provides for the identification, development, and testing of Special Operations Forces (SOF) intelligence equipment to identify and eliminate deficiencies in providing timely intelligence to deployed forces. The following distinct sub-projects address the primary areas of intelligence dissemination, sensor systems, integrated threat warning to SOF mission platforms, and tactical exploitation of national system capabilities. USSOCOM has developed an overall strategy to ensure that Command, Control, Communications, Computers, and Intelligence (C4I) systems continue to provide SOF with the required capabilities throughout the 21st century. USSOCOM's C4I systems comprise an integrated network of systems providing positive command and control and timely exchange of intelligence and threat warning to all organizational echelons. The C4I systems that support this new architecture will employ the latest standards and technology by transitioning from separate systems to full integration with the infosphere. The infosphere will allow SOF elements to operate with any force combination in multiple environments. The intelligence programs funded in this project will meet annual emergent requirements and are grouped by the level of organizational element they support: Operational Element (Team), Above Operational Element (Deployed), and Above Operational Element (Garrison). Sub-projects include:

## OPERATIONAL ELEMENT (TEAM)

- **PRIVATEER.** PRIVATEER is part of an evolutionary signal intelligence system migration and acquisition program that provides a permanent full spectrum radar and communications early warning capability aboard Cyclone-class Patrol Coastal (PC) and the MK V Special Operations Craft (SOC). PRIVATEER hosts a common software architecture that controls a variety of hardware modules designed to satisfy the unique platform requirements of each ship class. System configuration provides the equipment necessary to monitor and provide direction finding on radar and

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400	
<p>communications signals of interest. Also provides broadcast threat warning capability. Architecture is Joint Deployable Intelligence Support System/Joint Maritime Communications and Intelligence Support System compliant with UNIX-based software. Beginning in FY2002, PRIVATEER migrates to the Joint Threat Warning System (JTWS) program.</p> <ul style="list-style-type: none"> <li>• National Systems Support to SOF (NSSS). NSSS is a project to introduce and integrate national systems capabilities into the SOF force structure and operations. NSSS activities include increasing national systems awareness, demonstrating the tactical utility of national system data, testing technology and evaluating operational concepts in biennial Joint Staff Special Projects, and transitioning promising concepts and technologies into the SOF materiel inventory.</li> <li>• JTWS. JTWS develops a modular, scalable system that consists of user defined, integrated common hardware modules driven by an interoperable software architecture and configurable for use in manpack, unattended, and platform versions (ground, aircraft, and maritime). JTWS functional requirements include communications monitoring and direction finding, and receipt and correlation of near-real-time tactical intelligence broadcasts. This JTWS program consolidates legacy systems to include PRIVATEER, SILENT SHIELD, and SOF Signals Intelligence (SIGINT) Manpack System (SSMS).</li> <li>• Solid State Synthetic Aperture Radar. Provides for target detection in high sea states and high ground clutter environments.</li> </ul> <p>ABOVE OPERATIONAL ELEMENT (DEPLOYED)</p> <ul style="list-style-type: none"> <li>• Special Operations Tactical Video System (SOTVS). SOTVS will provide the capability to forward digital imagery near-real-time via current and planned future organic SOF tactical communication systems in support of surveillance and reconnaissance missions. A splash-proof camera version has been selected.</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400	
<p>ABOVE OPERATION ELEMENT (GARRISON)</p> <ul style="list-style-type: none"> <li>Special Operations Joint Interagency Collaborative Cell (SOJICC): The SOJICC will provide a capability to plan, coordinate, and integrate Joint Information Operations in support of the Concept of Operations (CONOPS) that support National Command Authority taskings, regional combatant commanders' theater plans and core mission tasks and provide USSOCOM mission planners a critical tool to positively effect the outcome of SOF missions worldwide. SOF has fallen behind state-of-the-art capabilities and is in jeopardy of losing relevancy as the subject matter experts for critical missions. Delays in the start of SOJICC will exacerbate existing shortfalls in SOF's ability to answer intelligence requirements associated with these mission planning actions and result in missed opportunities to thwart threats to the nation's security. Commercial sector and DoD research activities have made remarkable strides toward integrating existing translation algorithms, neural network pattern recognition programs, and visualization techniques that dramatically enhance intelligence analysis and Information Operations.</li> <li>Counter-Proliferation Analysis and Planning System (CAPS). CAPS will improve Combatant Commanders' support through collaboration, integration and mission planning. CAPS supports on-going operational support efforts including National Command Authority directed actions and planning.</li> </ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>(3.955) JTWS. Continued system architecture and software development/migration of the JTWS. (1QTR01)</li> <li>(1.366) NSSS. Continued to participate in JCS and theater CINC advanced concepts technology demonstrations to evaluate national technical support to amphibious operations, overall interoperability and support of combined SOF and conventional operations. Continued to assess technology and operational utility of national systems. Provided systems engineering and technical assistance. (1QTR01-3QTR01)</li> </ul>		

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## UNCLASSIFIED

RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400	
<ul style="list-style-type: none"> <li>• (1.557) PRIVATEER. Developed, integrated and tested the Block 3 Evolutionary Technology Insertion (ETI). (1QTR01)</li> <li>• (0.090) SOTVS. Intended to conduct an evaluation of a waterproof camera that was under development and splash-proof camera modified Non-Developmental Item (NDI) solutions. The waterproof variant effort was terminated. Based on the evaluation of splash-proof solutions, a determination was made to select an NDI commercial off-the-shelf solution which does not require further development. (2QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>• (1.582) NSSS. Continue to participate in JCS and theater CINC advanced concept technology demonstrations, which continue to evaluate national technical support to amphibious operations, overall interoperability and support of combined SOF and conventional operations. Continue to assess technology and operational utility of national systems. Provide systems engineering and technical assistance. (1QTR02-2QTR02)</li> <li>• (5.307) JTWS. Initiate JTWS ground variant prototype development and delivery of one ground variant team transportable prototype. (2QTR02)</li> <li>• (5.100) CAPS. Develop SOF unique capabilities of Air Force CAPS program: CAPS sensor integration, information operations, mission analysis, collaboration, hypertext markup language CAPS integration, sensor placement and optimization. (2QTR02)</li> <li>• (3.000) Solid State Synthetic Aperture Radar. Develop technologies to identify targets in high sea states and high ground clutter environments. (2QTR02)</li> </ul> <p>DEFENSE EMERGENCY RESPONSE FUND PLAN:</p> <ul style="list-style-type: none"> <li>• (3.180) SOJICC. Develop, integrate and test different commercial off-the-shelf hardware and software applications to achieve data compatibility for data mining and retrieval, link and nodal analysis, and data visualization. (1QTR02-2QTR02)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002																								
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7			R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400																										
<p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>(1.470) NSSS. Continue to participate in JCS and theater CINC advanced concepts technology demonstrations which continue to evaluate national technical support to amphibious operations, overall interoperability and support of combined SOF and conventional operations. Continue to assess technology and operational utility of national systems. Provide systems engineering and technical assistance. (1QTR03)</li> <li>(0.120) SOJICC. Continue systems engineering and program management efforts to achieve data compatibility by integrating different commercial off-the-shelf hardware and software applications for data mining and retrieval, link and nodal analysis, and data visualization. (2QTR03)</li> </ul> <p>B. <u>Other Program Funding Summary</u></p> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 8%; text-align: center;"><u>FY01</u></th> <th style="width: 8%; text-align: center;"><u>FY02</u></th> <th style="width: 8%; text-align: center;"><u>FY03</u></th> <th style="width: 8%; text-align: center;"><u>FY04</u></th> <th style="width: 8%; text-align: center;"><u>FY05</u></th> <th style="width: 8%; text-align: center;"><u>FY06</u></th> <th style="width: 8%; text-align: center;"><u>FY07</u></th> <th style="width: 8%; text-align: center;"><u>To Complete</u></th> <th style="width: 8%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>PROC, SOF Intel Systems</td> <td style="text-align: right;">28.527</td> <td style="text-align: right;">9.433</td> <td style="text-align: right;">8.166</td> <td style="text-align: right;">11.589</td> <td style="text-align: right;">13.654</td> <td style="text-align: right;">23.281</td> <td style="text-align: right;">14.668</td> <td style="text-align: center;">Cont.</td> <td style="text-align: center;">Cont.</td> </tr> </tbody> </table> <p>C. <u>Acquisition Strategy:</u></p> <ul style="list-style-type: none"> <li>JTWS is an evolutionary acquisition program that consolidated legacy systems to include: PRIVATEER, SILENT SHIELD and SSMS. As an evolutionary acquisition program, JTWS will continue to introduce systems improvements via ETI's tailored to satisfy specific platform requirements.</li> </ul>											<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>	PROC, SOF Intel Systems	28.527	9.433	8.166	11.589	13.654	23.281	14.668	Cont.	Cont.
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>To Complete</u>	<u>Total Cost</u>																				
PROC, SOF Intel Systems	28.527	9.433	8.166	11.589	13.654	23.281	14.668	Cont.	Cont.																				

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002							
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7					R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160405BB Special Operations Intelligence Systems Development / Project S400							
<ul style="list-style-type: none"> <li>SOJICC will integrate different commercial off-the-shelf hardware and software applications to provide a capability to plan, coordinate, and integrate Joint Information Operations in support of CONOPS supporting National Command Authority tasking, regional combatant commanders' theater plans and core mission tasks and provides USSOCOM mission planners a critical tool to positively effect the outcome of SOF missions worldwide.</li> </ul>												
					<u>FY01</u>		<u>FY02</u>		<u>FY03</u>			
					1	2	3	4	1	2	3	4
D. <u>Schedule Profile</u>												
NSSS Participation in Advanced Concepts Technology Demonstrations					x	x	x	x	x	x	x	x
PRIVATEER ETI Software Development, Integration and Testing					x	x	x	x				
JTWS Architecture & Software Development/Migration					x	x	x	x				
JTWS Ground Variant Prototype									x	x	x	
SOTVS Variant Evaluation					x							
SOJICC Integration and Test											x	x
CAPS Integration									x	x	x	
Solid State Synthetic Aperture Radar									x	x	x	

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Exhibit R-3 COST ANALYSIS					DATE: FEBRUARY 2002						
APPROPRIATION / BUDGET ACTIVITY				Special Operations Intelligence Systems Development/PE1160405BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Intelligence/S400							
Actual or Budget Value (\$ in millions)											
Cost Categories	Contract		Total	Budget	Award	Budget	Award	Budget	Award		
(Tailor to WBS, or System/Item Requirements)	Method & Type	Performing Activity & Location	PYs Cost	Cost FY01	Date FY01	Cost FY02	Date FY02	Cost FY03	Date FY03	To Complete	Total Program
Primary Hardware Dev	MIPR	SPAWAR, Charleston, SC	2.486	5.512	Nov-00	5.834	Feb-02	0.133	Oct-02	Cont.	Cont.
	FFP/SS	Qual-Tron, Inc., Tulsa, OK	0.050								0.050
	Various	Various	42.129			3.000	Mar-02				45.129
	FFP MIPR	Eastman Kodak, Inc. Rochester, NY	1.239								1.239
	MIPR	Battle Command Lab									0.000
	MIPR	Ft. Huachuca, AZ	0.493								0.493
	MIPR	Lawrence Livermore National Laboratory (LLNL), Livermore, CA				0.400	Mar-02				0.400
Ancillary Hardware Dev											
Systems Engineering	FP/SS	Wave Science, Inc, E Rochester, NY	0.005								0.005
	MIPR	Naval Undersea Warfare, Kpt, WA	0.090								0.090
	MIPR	Naval Air Warfare, St Inigoes, MD	1.231								1.231
	TBD	TBD				0.540	Mar-02	0.930	Nov-02	Cont.	Cont.
	Various	Various	1.206	0.027	Jun-01						1.233
	MIPR	SAF/FMB Washington D C	0.500	0.575	Feb-01						1.075
	MIPR	SPAWAR, Charleston, SC		0.345	Jan-01						0.345
	MIPR	LLNL, Livermore, CA				0.250	Mar-02				0.250
	MIPR	SPAWAR, Charleston, SC	0.813								0.813
Materiel/Equipment											
Subtotal Product Dev			50.242	6.459		10.024		1.063		Cont.	Cont.
Remarks:											
DERF Funds:											
Primary Hardware Development	Various	Various				1.547	Dec-01				1.547
Development Spt	MIPR	ESC, Hanscom AFB, MA	0.344								0.344
	MIPR	SPAWAR, Charleston, SC	0.145								0.145
	MIPR	Naval Systems Mgt. Activity, VA	1.180								1.180
Software Dev/Integ	MIPR	SPAWAR, Charleston, SC	4.442								4.442
	MIPR	Pt. Mugu, CA	0.050								0.050
	FFP/C	Delfin Systems, Santa Clara, CA	0.133								0.133
	MIPR	BTG, Inc., Fairfax, VA	1.205								1.205
	MIPR	LLNL, Livermore, CA				3.900	Mar-02				3.900
Software Spt	MIPR	GSA, Kansas City, MO	0.130								0.130
Training Development	MIPR	GSA, Kansas City, MO	0.080								0.080
	MIPR	Naval Air Warfare, St Inigoes, MD	0.030								0.030
	MIPR	LLNL, Livermore, CA				0.200	Mar-02				0.200
Integrated Logistics Spt											
Configuration Management	MIPR	SPAWAR, San Diego, CA	0.025								0.025

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Exhibit R-3 COST ANALYSIS							DATE: FEBRUARY 2002				
APPROPRIATION / BUDGET ACTIVITY				Special Operations Intelligence Systems Development/PE1160405BB							
RDT&E DEFENSE-WIDE / 7				Special Operations Intelligence/S400							
Actual or Budget Value (\$ in millions)											
Cost Categories	Contract		Total	Budget	Award	Budget	Award	Budget	Award		
(Tailor to WBS, or System/Item Requirements)	Method & Type	Performing Activity & Location	PYs Cost	Cost FY01	Date FY01	Cost FY02	Date FY02	Cost FY03	Date FY03	To Complete	Total Program
Development Spt (Cont)											
Technical Data	MIPR	Naval Air Warfare, St Inigoes, MD	0.090								0.090
Subtotal Spt			7.854	0.000		4.100					11.954
Remarks:											
DERF Funds:											
Software Dev/Tng	Various	Various				1.595	Jan-02				1.595
Training Development	FFP/C	EMC Corp, MacLean, VA				0.038	Jan-02				0.038
Developmental Test & Eval	MIPR	SPAWAR, Charleston, SC	0.630								0.630
	MIPR	JTIC, Ft Huachuca, AZ	0.172								0.172
OT&E	MIPR	SPAWAR, Charleston, SC	1.737								1.737
	MIPR	DESA, Kirtland, NM	0.217								0.217
	MIPR	18 FLTS, Hurlburt Field, FL	0.027								0.027
	MIPR	Naval Air Warfare, St Inigoes, MD	1.155								1.155
	MIPR	Naval Air Warfare, St Inigoes, MD	0.398								0.398
	MIPR	National Accessment Group, Kirtland AFB, NM		0.090	Feb-01						0.090
Subtotal T&E			4.336	0.090							4.426
Remarks:											
Government Engineering Spt											
Program Management Spt	CPFF/C	Booz-Allen & Hamilton, McLean, VA	2.831	0.419	Oct-00	0.500	Oct-01				3.750
	CPFF/C	TBD						0.510	Oct-02	Cont.	Cont.
	MIPR	LLNL, Livermore, CA				0.200	Mar-02				0.200
	MIPR	SPAWAR, Charleston , SC	0.487								0.487
Travel	N/A	USSOCOM, MacDill AFB, FL	0.124			0.165	Various	0.017	Various	Cont.	Cont.
Subtotal Management			3.442	0.419		0.865		0.527		Cont.	Cont.
Remarks:											
Total Cost			65.874	6.968		14.989		1.590		Cont.	Cont.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE FEBRUARY 2002			
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7				R-1 ITEM NOMENCLATURE PE1160407BB SOF Medical Technology Development					
COST (Dollars in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
PE1160407BB	1.996	4.017	1.962	1.994	2.232	2.270	2.314	Cont.	Cont.
S275 SOF MEDICAL TECHNOLOGY	1.996	4.017	1.962	1.994	2.232	2.270	2.314	Cont.	Cont.
<p><b>A. Mission Description and Budget Item Justification</b></p> <p>This program element provides studies, non-system exploratory advanced technology development and evaluations. The focus is on medical technologies, centering on physiologic, psychologic, and ergonomic factors affecting the ability of Special Operations Forces (SOF) to perform their missions. Current equipment and technology does not meet force requirements. The unique nature of special operations requires unique approaches to combat casualty care, medical equipment and other life support capabilities including life support for high altitude parachuting, combat swimming and other SOF unique missions. This program provides guidelines for the development of selection and conditioning criteria, thermal protection, decompression procedures, combat casualty procedures and life support systems. The program supports the development and evaluation of biomedical enhancements for the unique requirements of all SOF in the conduct of their diverse missions.</p> <p>Change Summary Explanation:</p> <p>Funding:  -- FY2002 Congressional Actions:  SOF Medical Technology from Air Force (\$2.1 million)</p> <p>Schedule: None.</p> <p>Technical: None</p>									

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE FEBRUARY 2002	
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE PE1160407BB SOF Medical Technology Development	
B. Program Change Summary	FY 2001	FY 2002	FY 2003
Previous President's Budget	2.004	1.917	1.962
Appropriated Value	2.065	4.017	
Adjustments to Appropriated Value / President's Budget	(.069)		
Current Budget Submit	1.996	4.017	1.962

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)					DATE FEBRUARY 2002					
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7		R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB Special Operations Forces Medical Technology Development / Project S275								
COST (Dollars in Millions)		FY01	FY02	FY03	FY04	FY05	FY06	FY07	Cost to Complete	Total Cost
S275, Special Operations Forces Medical Technology		1.996	4.017	1.962	1.994	2.232	2.270	2.314	Cont.	Cont.

A. Mission Description and Budget Item Justification

This project provides studies, non-system exploratory advanced technology development and evaluations. The focus is on medical technologies, centering on physiologic, psychologic, and ergonomic factors affecting the ability of Special Operations Forces (SOF) to perform their missions. Current equipment and technology does not meet force requirements. The unique nature of special operations requires unique approaches to combat casualty care, medical equipment and other life support capabilities including life support for high altitude parachuting, combat swimming and other SOF unique missions. This project provides guidelines for the development of selection and conditioning criteria, thermal protection, decompression procedures, combat casualty procedures and life support systems. The project supports the development and evaluation of biomedical enhancements for the unique requirements of all SOF in the conduct of their diverse missions. This effort is defined by the following seven areas of investigation:

- Combat casualty management will: (1) review the emergency medical equipment currently used in the SOF community and compare it to currently available civilian technology, and provide field testing of emergency medical equipment in the adverse environmental conditions encountered by SOF; (2) evaluate current tactical combat casualty care doctrine to ensure consideration of the wide variety of tactical scenarios encountered and apply the latest concepts in casualty care to these circumstances; and (3) develop CD-ROM and internet compatible automated programs to support SOF medical personnel information needs while operating in austere locations and medical interviews in multiple foreign languages.
- Decompression procedures for SOF diving operations will: (1) decrease the decompression obligation in SOF diving operations through the use of surface-interval oxygen breathing; and (2) investigate pre-oxygenation requirements for high-altitude SOF parachute operations.

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB Special Operations Forces Medical Technology Development / Project S275	
<ul style="list-style-type: none"> <li>Exercise-related injuries will evaluate the effectiveness of applying sports medicine diagnostic, therapeutic, and rehabilitative techniques in management of the traumatic and overuse injuries commonly encountered among SOF.</li> <li>Inhaled gas toxicology will evaluate the feasibility of using pharmacologic intervention to reduce or eliminate the possibility of central nervous system toxicity.</li> <li>Medical sustainment training techniques will: (1) examine novel ways of providing and documenting medical sustainment training for SOF corpsmen and physicians; and (2) develop a system for constantly upgrading the medical expertise of SOF medical personnel by incorporating new research reports and clinical information into a CD-ROM based computer system which can be used by medical personnel in isolated duty circumstances.</li> <li>Mission-related physiology will: (1) develop accurate measures to evaluate SOF mission-related performance; (2) delineate nutritional strategies designed to help personnel apply known nutritional concepts to optimize performance in mission and training scenarios; (3) evaluate potential ergogenic agents as they apply to enhancing mission-related performance; (4) study the safety and efficacy of various substances to increase performance in sustained operations; (5) develop a quantitative test for night vision suitable for screening SOF candidates and study ways to enhance unaided night vision; and (6) study pharmacologic measures to prevent acute mountain sickness in high altitude SOF operations.</li> <li>Thermal protection will evaluate the efficacy of current thermal protective measures in maintaining combat swimmer performance.</li> </ul> <p>FY 2001 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>(0.747) Continued ongoing studies as follows: SOF Medical Skills Utilization, Impact of Breathing Gas Mixtures on Decompression Sickness, Laser Insitu Keratomileusis in Special Operations. Complete ongoing studies as follows: Respiratory Muscle Training Operational Enhancements, High Altitude Parachute Operations after Diving, Influence of Post Landing Exercise on Altitude Decompression Sickness, SOF Medical Handbook, Operational Medicine CD-ROM, Characterization of SOF Mission-Related Performance Levels, Efficacy of Dexedrine for SOF Performance,</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB Special Operations Forces Medical Technology Development / Project S275	
<p>Casualty Evacuation Delays and Outcomes, Enhancement of SOF Medical Readiness Training through Human Patient Simulators, and VVAL 18 Dive Planner. (1-2QTR01)</p> <ul style="list-style-type: none"> <li>(1.249) Initiated studies as follows: Protective Barrier Substances for Coelenterate Envenomation, Advanced Sea, Air, Land Delivery System (ASDS)/Underwater Breathing Apparatus, Bronchoal Lavage in Swimming Induced Pulmonary Edema, Cardiopulmonary Function in Swimming Induced Pulmonary Edema and Extended Pulmonary O<sup>2</sup> Limits. Completed studies as follows: Motion Sickness in Naval Special Warfare, Architecture and Digital Data Base for Combatant Craft Ergonomics, Effectiveness of Antiperspirants on Foot Blister Incidence during Special Forces Assessment and Selection, and Exercise Enhanced Pre-Breathe for Decompression Sickness (DCS) Risk. (1-2QTR01)</li> </ul> <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> <li>(0.638) Continue ongoing studies as follows: SOF Medical Skills Utilization, Bronchoal Lavage in Swimming Induced Pulmonary Edema, Cardiopulmonary Function in Swimming Induced Pulmonary Edema, Impact of Breathing Gas Mixtures on DCS, Laser Insitu Keratomileusis in Special Operations, and ASDS/Underwater Breathing Apparatus. Complete ongoing studies as follows: Extended Pulmonary O<sup>2</sup> Limits, and Protective Barrier Substances for Coelenterate Envenomation. (1QTR02)</li> <li>(1.279) Initiate new studies as follows: Caprine Analgesia, Operational Medicine CD-ROM Upgrade, Treatment Standards for DCS/Arterial Gas Embolism (AGE), SOF Mission Related Performance Measures Upgrade, Antibiotic Prophylaxis, Teleconsultation in SOF, Operational use of Altitude Decompression Sickness Risk Assessment Computer (ADRAC), and Decompression Computer Diving Surveillance and Configuration Management Program. Complete new studies as follows: Improving SOF Mission Performance/Mission Commander Training Package, and Local and Distant Effects of Injectable Hemostatic Drugs. (2QTR02)</li> </ul>		

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RDT&E PROJECT JUSTIFICATION SHEET (R-2A Exhibit)		DATE FEBRUARY 2002
APPROPRIATION / BUDGET ACTIVITY RDT&E, DEFENSE-WIDE / 7	R-1 ITEM NOMENCLATURE / PROJECT NO. PE 1160407BB Special Operations Forces Medical Technology Development / Project S275	
<ul style="list-style-type: none"> <li>(2.100) Initiates the following projects: Anthrax Infection Response Kit, Plasma Based Chemical/Biological Decontamination, Remote Vital Signs Monitor, Anti-Shock Kit for use in Chemical/Biological Environments, Escape and Evasion Performance Enhancements, Laser eye protection for AFSOC and ground forces. This Congressional plus-up was a transfer from Air Force Program Element 040411F. (4QTR02)</li> </ul> <p>FY 2003 PLAN:</p> <ul style="list-style-type: none"> <li>(0.784) Continue ongoing studies as follows: Operational Medicine CD-ROM Upgrade, Teleconsultation in SOF, SOF Mission Related Performance Measures Upgrade, Treatment Standards for DSC/AGE, and Decompression Computer Diving Surveillance and Configuration Management Program. Complete ongoing studies as follows: Laser Insitu Keratomileusis in Special Operations, Caprine Analgesia, Operational Use of ADRAC, Antibiotic Prophylaxis, Bronchoal Lavage in Swimming Induced Pulmonary Edema, Cardiopulmonary Function in Swimming Induced Pulmonary Edema, ASDS/Underwater Breathing Apparatus, Impact of Breathing Gas Mixtures on Decompression Sickness, and SOF Medical Skills Utilization. (1QTR03)</li> <li>(1.178) Initiate new studies as follows: Medical Research and Development Enhancements for Non-Medical Systems, Rapid Diagnostic Systems, SOF Performance Enhancing Drug Protocols, Interactive SOF Medical Distant Learning, Remote Telemetry Patient Monitoring/Casualty Assessment, Blunt Trauma Injuries, Casualty Retrieval Devices and Advanced Combat Casualty Care Procedures. Complete new studies as follows: Graduate Research. (2QTR03)</li> </ul> <p>B. <u>Other Program Funding Summary</u>: None.</p> <p>C. <u>Acquisition Strategy</u>: None.</p> <p>D. <u>Schedule Profile</u>: None.</p>		

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**Special Operations Command**

**FY 2003 RDT&E PROGRAM**

Line	Program			Thousands of Dollars		
<u>No</u>	<u>Number</u>	<u>Item</u>	<u>Act</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
171	1160408BB	SOF Operational Enhancements	7	77,822	86,209	77,308

This Program is Classified

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**Exhibit R-1, RDT&E Programs**  
**Defense Contract Management Agency**  
**(Dollars in Thousands)**

Appropriation: 0400

Date: February 2002

R-1 Line	Program Element		Budget	FY 2001	FY 2002	FY 2003
<u>Item No</u>	<u>Number</u>	<u>Item</u>	<u>Activity</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>
93	0605013	DCMA Information Technology Development	05	1,659	2,455	3,938
97	0605015	Information Technology Standard Procurement System (SPS)	05	15,624	7,687	10,427
		TOTAL DIRECT		17,283	10,142	14,365

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Exhibit R-2, RDT&E Budget Item Justification								Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY: 0400/05					R-1 ITEM NOMENCLATURE DCMA Information Technology: 0605013				
COST (\$ in Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	COST TO COMPLETE	TOTAL COST
0001 Systems Modification and Development	1.659	2.455	3.938					Continuing	Continuing

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**A. Mission Description and Budget Item Justification**

DCMA Information Technology covers those efforts associated with the development of DCMA-unique mission software applications development. To better support the nation's warfighter, DCMA must leverage information technology to improve the services it provides to its customers in the military services and other Defense agencies.

FY 2002 Plan

\$2.4 million: In FY 2002 DCMA efforts include the transformation of the current 21 DCMA-unique automated information systems into a more robust tool set for more timely, complete, and accurate Preaward Surveys of prospective contractors, contract price negotiations, material acceptances, and contractor payments. The transformations will feature transitions to more modern and more easily administered databases, enhanced functionalities, improved security features, and reduced deployment and maintenance costs.

FY 2003 Plan

\$3.9 million: FY 2003 is a continuation of the above efforts.

<b>B. <u>Program Change Summary</u></b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>Total Cost</b>
Presidents Budget Submission	1.659	2.469	3.938					Continuing
Adjustments to Appropriated Value		-.014						Continuing
Current Budget Submission	1.659	2.455	3.938					Continuing

**C. Other Program Funding Summary (N/A)**

**D. Acquisition Strategy Various**

**E. Schedule Profile** Develop improved automated information systems/tool sets for effective and efficient contract administration services provided to Military Services, Defense Agencies and customers.

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EXHIBIT R-3 Cost Analysis									Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY: 0400/05				DCMA Information Technology			Systems Modification and Development			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Software Development	Various	Various	1.659	2.455	Various	3.938	Various	Cont.	Cont.	Cont.
Remarks: DCMA Information Technology covers those efforts associated with the development of DCMA-unique mission software applications. DCMA will issue several contracts that will transform the current 21 DCMA-unique automated information systems into a more modern and more easily administered set of databases.										
Functional Area Applications (FAA) include Procurement/Contract Administration as general activities under the Global Information Grid (GIG) and Information Technology/Defense Information Infrastructure (IT/DII) Reporting Structure in the Financial Management Regulation (FMR). FAA incorporates Procurement/Contract Administration activities including maintenance of legacy systems, new generation web applications, integrated database, and MOCAS "To Be Transition" (which is the testing and deployment of the Standard Procurement Systems (SPS) to DCMA).										
Related Technical Activities includes Technical Activities and Advanced Research and Development Activities as general activities under the Global Information Grid (GIG) and Information Technology/Defense Information Infrastructure (IT/DII) Reporting Structure in the Financial Management Regulation (FMR). Technical Activities include labor, supplies, technical contractor support, and program contractor support.										

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R-1 Shopping List

Exhibit R-2, RDT&E Budget Item Justification								Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY: 0400/05					R-1 ITEM NOMENCLATURE Standard Procurement System (SPS): 0605015				
COST (In Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	COST TO COMPLETE	TOTAL COST
Total PE Cost	15.624	7.687	10.427					Continuing	Continuing
0001 Product Development	12.999	6.056	8.972					Continuing	Continuing
0002 Test and Evaluate	2.625	1.631	1.455					Continuing	Continuing
<b>A. <u>Mission Description and Budget Item Justification</u></b> <ul style="list-style-type: none"><li>The Standard Procurement System (SPS) is a procurement system to support standardized data, policies and procedures for contract placement and contract administration for DoD unclassified contracting activities. The Director of Defense Procurement identified the need for a standard procurement system for unclassified contracting activities of the US Army, US Navy, US Air Force, US Marine Corps, Defense Logistics Agency, Defense Contract Management Agency, and Other Defense Activities (ODAs). The goals of the SPS are to: reduce problem disbursements, standardize DoD automated procurement functions, retire legacy systems, and contribute to the DoD paperless contracting initiative.</li></ul>									

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Exhibit R-2, RDT&E Budget Item Justification							Date: February 2002				
APPROPRIATION/BUDGET ACTIVITY: 0400/05					R-1 ITEM NOMENCLATURE Standard Procurement System (SPS): 0605015						
COST (In Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	COST TO COMPLETE	TOTAL COST		
Total PE Cost	15.624	7.687	10.427					Continuing	Continuing		
0001 Product Development	12.999	6.056	8.972					Continuing	Continuing		
0002 Test and Evaluate	2.625	1.631	1.455					Continuing	Continuing		
0001 The Standard Procurement System (SPS) is based on modification of a commercial item. The item needs to be modified to support DoD requirements (Federal Acquisition Regulations (FAR), Defense Federal Acquisition Regulations (DFARS)). These requirements were not completely met by the initial commercial item. Product Development funds support the modifications necessary to meet the functional requirements.											
0002 This project is located in budget activity 5, Engineering and Manufacturing Development, to support testing of additional functionality to the SPS software. Testing types include operational test and evaluation efforts and product functionality exercises. Efforts will ensure that the SPS meets the requirements set forth by the procurement community.											
								To			
Total											
B. Program Change Summary				FY01	FY02	FY03	FY04	FY05	FY06	FY07	Complete
Cost											
President's Budget Submission				15.662	9.747	10.427					Continuing
Continuing											
Adjustments to Appropriated Value				-.038	-2.060	0					
Current Budget Submission				15.624	7.687	10.427					Continuing
Continuing											

Unclassified

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Unclassified



Unclassified

Exhibit R-2a, RDT&E Budget Item Justification								Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY: 0400/05				R-1 ITEM NOMENCLATURE Standard Procurement System (SPS): 0605015					
COST (In Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	COST TO COMPLETE	TOTAL COST
0001 Product Development	12.999	6.056	8.972					Continuing	Continuing

**A. Mission Description & Budget Item Justification**  
 0001 The Standard Procurement System (SPS) is based on modification of a commercial item. The item needs to be modified to support DoD requirements (Federal Acquisition Regulations (FAR), Defense Federal Acquisition Regulations (DFARS)). These requirements were not completely met by the initial commercial item. Product Development funds support the modifications necessary to meet the functional requirements.

FY 2002 Plan  
 \$6.0 million: In FY 2002 efforts include developing scheduled functional requirements to the commercially derived item. Also, includes developing interfaces with logistics and financial systems.

FY 2003 Plan  
 \$8.9 million: FY 2003 includes the continuation of developing functional enhancements with software packages and interfacing with logistics and financial systems.

**To**

<b>Total</b>									
<b>B. <u>Program Change Summary</u></b>	<b>FY01</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>Complete</b>	
<b><u>Cost</u></b>									
President's Budget Submission	14.630	8.721	9.456					Continuing	
Continuing									
Adjustments to Appropriated Value	-1.631	-2.665	-.484						
Current Budget Submission	12.999	6.056	8.972					Continuing	
Continuing									

**C. Other Program Funding Summary** (N/A)

**D. Acquisition Strategy**  
 The Standard Procurement System (SPS) has an Acquisition Strategy prepared 24 March 1997 by the Defense Procurement Corporate Information Management (CIM) Systems Center in accordance with DoD 5000.2-R.

**E. Schedule Profile**

- Continue development of scheduled functional requirement enhancements to the commercially derived item.
- Develop interfaces with logistics and finance systems for procurement communities to exchange data with SPS.

Unclassified

Unclassified

Exhibit R-2a, RDT&E Budget Item Justification								Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY: 0400/05					R-1 ITEM NOMENCLATURE Standard Procurement System (SPS): 0605015				
COST (In Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	COST TO COMPLETE	TOTAL COST
0002 Test and Evaluate	2.625	1.631	1.455					Continuing	Continuing

Unclassified

Unclassified

**A. Mission Description & Budget Item Justification**

0002 This project is located in budget activity 5, Engineering and Manufacturing Development, to support testing of additional functionality to the SPS software. Testing types include operational test and evaluation efforts and product functionality exercises. Efforts will ensure that the SPS meets the requirements set forth by the procurement community.

FY 2002 Plan

\$1.6 million: In FY 2002 efforts include testing and evaluating SPS software to determine whether results are meeting the Agency's procurement expectations before deployment.

FY 2003 Plan

\$1.4 million: In FY 2003 testing requirements developed and validating system acceptability before deployment in the procurement community will continue.

								To
Total								
B <u>Program Change Summary</u>	FY01	FY02	FY03	FY04	FY05	FY06	FY07	<u>Complete</u>
<u>Cost</u>								
President's Budget Submission	1.032	.966	.971					Continuing
Continuing								
Adjustments to Appropriated Value	+1.593	+.665	+.484					
Current Budget Submission	2.625	1.631	1.455					Continuing
Continuing								

**C. Other Program Funding Summary** (N/A)

**D. Acquisition Strategy**

The Standard Procurement System (SPS) has an Acquisition Strategy prepared 24 March 1997 by the Defense Procurement Corporate Information Management (CIM) Systems Center in accordance with DoD 5000.2-R.

**E. Schedule Profile**

- Test requirements developed and validate system acceptability for next scheduled release of SPS software.
- Test interfaces developed for logistics and finance systems scheduled for deployment to procurement communities.

Unclassified

Unclassified

EXHIBIT R-3 Cost Analysis									Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY: 0400/05				Standard Procurement System (SPS): 0605015			Product Development			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
0001 Product Development	Various	Various	12.999	6.056	Various	8.972	Various	Cont.	Cont.	Cont.
Remarks: N/A										

Unclassified

Unclassified

EXHIBIT R-3 Cost Analysis									Date: February 2002	
APPROPRIATION/BUDGET ACTIVITY: 0400/05				Standard Procurement System (SPS): 0605015			Test and Evaluate			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
0002 Test and Evaluate	Various	Various	2.625	1.631	Various	1.455	Various	Cont.	Cont.	Cont.
Remarks: N/A										

Unclassified

Unclassified

Exhibit PB-1	<u>Direct Budget Plan (TOA)</u>			<u>Budget Authority</u>		
Appropriation Title	<u>FY 2001</u> <u>Estimate</u>	<u>FY 2002</u> <u>Estimate</u>	<u>FY 2003</u> <u>Estimate</u>	<u>FY 2001</u> <u>Estimate</u>	<u>FY 2002</u> <u>Estimate</u>	<u>FY 2003</u> <u>Estimate</u>
RDT&E	17.283	10.142	14.365	17.283	10.142	14.365

Unclassified

**DoD Joint Service  
Chemical/Biological Defense Program**

**RDT&E Descriptive Summaries for  
FY 2003 Budget Submission  
RDT&E, Defense-Wide**



**February 2002**

## **Department of Defense Chemical/Biological Defense Program Overview**

### **FY 2003 President's Budget Submission**

**The DoD Chemical/Biological Defense (CBD) Program provides development and procurement of systems for U.S. forces to operate in all battlespaces contaminated with chemical and biological (CB) agents in support of U.S. counterproliferation policy. The probability of U.S. forces encountering CB agents remains high. In FY 2003, the CBD Program expands to support homeland security and combating terrorism initiatives of the President and the Department by providing those systems necessary to effectively deter and respond to acts of CB terrorism.**

**The CBD Program continues to implement congressional direction to improve joint CBD capabilities and reflects an integrated jointly developed modernization program. This year's program funds the passive defense counterproliferation initiatives, enhances military support to civilian authorities with consequence management capabilities, and initiates strong homeland security programs to enhance CB preparedness. The CBD Program invests in technologies to provide improved capabilities that have minimal adverse impact on our warfighting potential. Joint and Service unique programs support the framework of the three tenets of CB defense: Contamination Avoidance (detection and identification) and NBC Battle Management (reconnaissance and warning of battlespace contamination to enable units to maneuver around the contamination), Force Protection (individual, collective, and medical support), and Decontamination. The FY 2003 budget adjusts CBD modernization efforts to meet the strategy as outlined in the September 2001 Report of the Quadrennial Defense Review and includes resources for CB sensors, early-detection systems and an integrated joint warning and reporting network for CB attacks; biological warfare defense vaccines, medical countermeasures and surveillance systems; improvement of protective suits and masks; and modernized decontamination systems that minimize environmental impact and are suitable for use on sensitive aircraft and electronic systems and for area decontamination of ports and airfields.**



**The expansion of the CBD Program mission to address homeland security represents an overall increase to the CBD Program of approximately \$465 million in FY 2003. In terms of RDT&E, the increased funding will establish two test beds at DoD installations and two urban areas in addition to National Capital region to integrate Biological Defense and surveillance technologies, provide for the development of second generation systems for the National Guard Weapons of Mass Destruction Civil Support Teams, and establish a Center for Biological Counterterrorism Research. In terms of procurement, the increased funding will initiate a pilot program that will provide comprehensive chemical and biological force protection to nine critical DoD installations worldwide. Overall, the FY 2003 President's budget achieves a structured, executable, and integrated medical and non-medical joint chemical biological defense program that balances the short-term procurement urgencies that include securing the homeland from terrorist attack, against long-term S&T efforts to mitigate future chemical and biological attacks. The program supports our commitment to ensure full dimensional protection for all our fighting men and women operating at home and abroad under the threat of chemical and biological weapons.**

**All of these capabilities integrated together as a system-of-systems are essential to avoid contamination and to sustain operational tempo on an asymmetric battlefield; as well as satisfy emerging Homeland Security requirements. In summary, the DoD CBDP remains committed to establishing the correct balance between the near term requirement to field modernized equipment to the field, and the need to protect and replenish our long term investment in technology.**

**Chemical and Biological Defense Program  
FY 2003 Budget Submission**

**EXHIBIT R-1**

**APPROPRIATION: 0400D Research, Development, Test & Eval, Defense Wide**

**Date: February 2002**

<b>Thousands of Dollars</b>						
<b>Line No</b>	<b>Program Number</b>	<b>Item</b>	<b>Act</b>	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>
008	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	1	38,369	45,791	64,119
	<b>Basic Research</b>			<b>38,369</b>	<b>45,791</b>	<b>64,119</b>
017	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	2	93,172	146,431	262,177
	<b>Applied Research</b>			<b>93,172</b>	<b>146,431</b>	<b>262,177</b>
037	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)	3	58,241	75,266	249,842
	<b>Advanced Technology Development</b>			<b>58,241</b>	<b>75,266</b>	<b>249,842</b>
076	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)	4	82,315	89,756	144,790
	<b>Demonstration and Validation</b>			<b>82,315</b>	<b>89,756</b>	<b>144,790</b>
083	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (EMD)	5	98,836	161,383	169,018
	<b>Engineering and Manufacturing Dev</b>			<b>98,836</b>	<b>161,383</b>	<b>169,018</b>
111	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)	6	27,236	31,052	42,959
111	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6	6,630	0	0
	<b>Management Support</b>			<b>33,866</b>	<b>31,052</b>	<b>42,959</b>
<b>Total Chemical and Biological Defense Program</b>				<b>404,799</b>	<b>549,679</b>	<b>932,905</b>

**UNCLASSIFIED**

SCENARIO - FY03 PB  
MODE - BLDOVR

PGM 008 - Budget Activity, PE, Item Report (RDTE)

14-FEB-2002  
17:24:01

	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY03 07
BA1 Basic Research								
0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)								
CB1 CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	8,801	10,927	6,574	6,440	6,547	7,803	10,780	38,144
HS1 HOMELAND SECURITY (BASIC RESEARCH)	0	0	25,000	0	0	0	0	25,000
TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	19,958	25,049	23,986	20,461	21,163	20,229	20,395	106,234
TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	9,610	9,815	8,559	9,533	9,830	10,926	11,017	49,865
[T] 0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	38,369	45,791	64,119	36,434	37,540	38,958	42,192	219,243
BA2 Applied Research								
0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)								
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	56,925	91,432	68,817	54,007	52,828	56,281	54,451	286,384
HS2 HOMELAND SECURITY (APPLIED RESEARCH)	0	0	137,000	0	0	0	0	137,000
TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	22,428	36,513	38,386	24,085	25,097	17,826	18,148	123,542
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	13,819	18,486	17,974	17,150	16,569	18,421	18,572	88,686
[T] 0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	93,172	146,431	262,177	95,242	94,494	92,528	91,171	635,612
BA3 Advanced Technology Development								
0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)								
CB3 CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	15,935	21,553	27,248	33,964	33,721	26,599	31,800	153,332
CM3 WMD - CIVIL SUPPORT TEAM (ADV TECH DEV)	0	0	2,500	2,500	2,500	2,500	2,500	12,500
CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)	9,944	12,492	11,738	5,327	5,368	4,697	4,242	31,372
HS3 HOMELAND SECURITY (ADV TECH DEV)	0	0	162,000	0	0	0	0	162,000
TB3 MEDICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	22,394	29,919	34,200	50,789	45,560	40,585	40,675	211,809
TC3 MEDICAL CHEMICAL DEFENSE (ADV TECH DEV)	9,968	11,302	12,156	13,423	13,773	12,907	13,011	65,270
[T] 0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)	58,241	75,266	249,842	106,003	100,922	87,288	92,228	636,283
BA4 Demonstration and Validation								
0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)								
BJ4 BIOLOGICAL DEFENSE (DEMVAL)	5,765	1,560	3,661	19,163	19,329	0	0	42,153
CA4 CONTAMINATION AVOIDANCE (DEMVAL)	8,866	16,274	16,963	1,988	2,997	0	0	21,948
CM4 WMD - CIVIL SUPPORT TEAM (DEMVAL)	0	0	0	0	0	2,600	0	2,600
CO4 COLLECTIVE PROTECTION (DEMVAL)	1,454	0	4,390	0	0	0	0	4,390
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	15,709	15,243	13,423	20,442	21,137	24,459	25,516	104,977
DE4 DECONTAMINATION SYSTEMS (DEMVAL)	3,368	6,143	6,972	12,378	14,220	3,997	3,992	41,559
HS4 HOMELAND SECURITY (DEMVAL)	0	0	55,000	0	0	0	0	55,000
IP4 INDIVIDUAL PROTECTION (DEMVAL)	16,610	14,317	0	0	0	0	0	0
MB4 MEDICAL BIOLOGICAL DEFENSE (DEMVAL)	28,465	34,343	42,617	46,775	10,271	14,874	12,361	126,898
MC4 MEDICAL CHEMICAL DEFENSE (DEMVAL)	2,078	1,876	1,764	1,754	1,705	2,064	2,107	9,394

SCENARIO - FY03 PB  
MODE - BLDOVR

PGM 008 - Budget Activity, PE, Item Report (RDTE)

14-FEB-2002  
17:24:01

	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY03 07
[T] 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)	82,315	89,756	144,790	102,500	69,659	47,994	43,976	408,919
BA5 Engineering and Manufacturing Dev								
0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)								
BJ5 BIOLOGICAL DEFENSE (EMD)	7,575	12,803	14,660	17,977	17,315	37,632	35,708	123,292
CA5 CONTAMINATION AVOIDANCE (EMD)	59,268	71,421	58,341	36,689	18,929	30,581	13,468	158,008
CM5 WMD - CIVIL SUPPORT TEAM (EMD)	0	0	1,000	1,000	14,500	400	0	16,900
CO5 COLLECTIVE PROTECTION (EMD)	3,137	3,987	4,301	8,122	6,690	4,239	4,718	28,070
DE5 DECONTAMINATION SYSTEMS (EMD)	3,746	2,498	4,981	4,925	897	4,996	2,993	18,792
IP5 INDIVIDUAL PROTECTION (EMD)	8,288	20,711	39,044	36,195	12,735	1,411	0	89,385
MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)	15,772	48,500	44,718	20,284	35,904	36,056	39,815	176,777
MC5 MEDICAL CHEMICAL DEFENSE (EMD)	1,050	1,463	1,973	1,486	1,448	1,727	1,763	8,397
[T] 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)	98,836	161,383	169,018	126,678	108,418	117,042	98,465	619,621
BA6 Management Support								
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)								
AT6 ANTI-TERRORISM	443	457	460	463	486	512	522	2,443
CM6 WMD - CIVIL SUPPORT TEAM (MANAGEMENT SUPPORT)	0	0	1,600	1,600	1,600	1,600	1,600	8,000
DT6 JOINT DOCTRINE AND TRAINING SUPPORT	3,108	3,278	6,098	6,039	3,495	6,073	6,193	27,898
DW6 DUGWAY PROVING GROUND	9,732	15,315	15,651	15,156	15,442	16,922	17,164	80,335
HS6 HOMELAND SECURITY (MANAGEMENT SUPPORT)	0	0	6,000	0	0	0	0	6,000
MS6 MANAGEMENT SUPPORT	12,482	9,015	10,152	10,282	10,485	11,415	11,613	53,947
O49 JOINT POINT TEST	1,471	2,987	2,998	2,990	2,987	2,998	2,994	14,967
[T] 0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)	27,236	31,052	42,959	36,530	34,495	39,520	40,086	193,590
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)								
SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6,630	0	0	0	0	0	0	0
[T] BA6 Management Support	33,866	31,052	42,959	36,530	34,495	39,520	40,086	193,590
[GT]	404,799	549,679	932,905	503,387	445,528	423,330	408,118	2,713,268

# **BUDGET ACTIVITY 1**

## UNCLASSIFIED

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA1 - Basic Research**

PE NUMBER AND TITLE

**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)**

COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		38369	45791	64119	36434	37540	38958	42192	Continuing	Continuing
CB1	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	8801	10927	6574	6440	6547	7803	10780	Continuing	Continuing
HS1	HOMELAND SECURITY (BASIC RESEARCH)	0	0	25000	0	0	0	0	0	25000
TB1	MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	19958	25049	23986	20461	21163	20229	20395	Continuing	Continuing
TC1	MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	9610	9815	8559	9533	9830	10926	11017	Continuing	Continuing

UNCLASSIFIED

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	
<p><b>A. <u>Mission Description and Budget Item Justification:</u></b> This program element (PE) funds the Joint Service core research program for chemical and biological (CB) defense (medical and non-medical). The basic research program aims to improve the operational performance of present and future Department of Defense (DoD) components by expanding knowledge in relevant fields for CB defense and Homeland Security. Moreover, basic research supports a Joint Force concept of a lethal, integrated, supportable, highly mobile force with enhanced performance by the individual soldier, sailor, airman, or marine. Specifically, the program promotes theoretical and experimental research in the chemical, biological, medical, and related sciences. Research efforts are planned to be initiated in CB defense Homeland Security technologies. This funding supports establishment of a capability for biological terrorism threat assessment research in a Center for Biological Counterterrorism Research. Research areas are determined and prioritized to meet Joint Service needs as stated in mission area analyses and Joint operations requirements, and to take advantage of scientific opportunities. Basic research is executed by academia, including Historically Black Colleges and Universities and Minority Institutions (HBCU/MIs), and government research laboratories. Funds directed to these laboratories and research organizations capitalize on scientific talent, specialized and uniquely engineered facilities, and technological breakthroughs. The work in this program element is consistent with the Joint Service Nuclear, Biological, and Chemical (NBC) Defense Research, Development, and Acquisition (RDA) Plan. Basic research efforts lead to expeditious transition of the resulting knowledge and technology to the applied research (PE 0602384BP) and advanced technology development (PE 0603384BP) activities. This project also covers the conduct of basic research efforts in the areas of real-time sensing and diagnosis and immediate biological countermeasures. The projects in this PE include basic research efforts directed toward providing fundamental knowledge for the solution of military problems and therefore are correctly placed in Budget Activity 1.</p>		
Page 2 of 25 Pages		Exhibit R-2 (PE 0601384BP)

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA1 - Basic Research**

PE NUMBER AND TITLE

**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC  
RESEARCH)****B. Program Change Summary:**

		<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>
Previous President's Budget (FY 2002 PB)		39532	39066	39306
Appropriated Value		39897	46066	0
Adjustments to Appropriated Value		0	0	0
a. Congressional General Reductions		0	-275	0
b. SBIR/STTR		-279	0	0
c. Omnibus or Other Above Threshold Reductions		0	0	0
d. Below Threshold Reprogramming		-1163	0	0
e. Rescissions		-86	0	0
Adjustments to Budget Years Since FY 2002 PB		0	0	24813
Current Budget Submission (FY 2003 PB)		38369	45791	64119

**Change Summary Explanation:**

**Funding:** FY02 - Congressional adjustments to support various CBD basic research programs (+\$5,000K CB1; +\$2,000K TB1). Congressional general reductions (-\$275K).

FY03 - Increases to the technology base to fund a Homeland Security Support effort identified in the new Project HS1 (+\$25,000K). Adjustment for inflation assumptions (-\$187K).

**Schedule:****Technical:****C. Other Program Funding Summary:** See section B in the R2A's



**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/****BA1 - Basic Research**

PE NUMBER AND TITLE

**0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC  
RESEARCH)****D. Execution: (Organizations receiving 10% or more of execution year funding)**

Labs/Centers:

TB1 - U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, MD; TC1 - U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD; CB1 - U.S. Army Soldier Biological Chemical Command, APG-EA, MD; Naval Research Lab, Washington, DC

Universities: None

FFRDCs: None

Contractors: None

Other: None

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>				PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>				PROJECT <b>CB1</b>				
COST (In Thousands)				FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CB1	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)			8801	10927	6574	6440	6547	7803	10780	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CB1 CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH):** This project funds basic research in chemistry, physics, mathematics, life sciences, and fundamental information in support of new and improved detection technologies for biological agents and toxins; new and improved detection technologies for chemical threat agents; advanced concepts in individual and collective protection; new concepts in decontamination; and information on the chemistry and toxicology of threat agents and related compounds.

Project CB1
Page 5 of 25 Pages
Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	
PROJECT <b>CB1</b>		
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>4892 Chemical/Biological Agent Detection - Conducted a multidisciplinary project to establish the proof of principle for detection methodologies and to develop detection systems for sensing the presence of chemical and biological warfare (CBW) agents. Produced a design for a point detector to achieve highly specific and rapid detection of the CW agents in air using Cylindrical Ion Trap Mass Spectrometry (CITMS). Investigated Ion Trap Mass Spectrometric (ITMS) methodologies for Biological Warfare (BW) agent detection and a priori identification. Investigated neutron based CW detection.</li> <li>1658 Thin Film Technology Development - Continued development of semiconducting metal oxide (SMO) thin film technology to detect chemical agents. Sought to minimize power requirements, weight, and volume with an overall intent to reduce burden to the individual user. Focused on approaches to maximize selectivity/elimination of false alarms including mixed metal oxide films and nanocluster structures. Examined pre-filtration/preconcentration through chemical vapor deposition (CVD) methods. Continued improvements in signal processing and control.</li> <li>1120 Chemistry and Toxicology of Bio-active Compounds - Continued materials selection for molecular imprinting technique in preparation for integration into a passive thin film chemical detection badge. Continued studies of the percarbonate based decontaminant formulations by determining reaction product distributions and correlate equilibrium concentrations with solvent properties. Completed measurement of requisite adsorption rate data and began development of a continuous adsorption model for filter performance. Continued project to understand the toxicological mechanisms of one or two members of a class of potential new threat agents.</li> </ul>		
Project CB1	Page 6 of 25 Pages	Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>694 Bio-sensors - Sequenced and synthesized DNA aptamer recognition elements to Staphylococcal enterotoxin B. Completed conjugate synthesis and integration of specific DNA/fluorescent polymer conjugates; high affinity aptamer for anthrax spores were isolated and cloned and are now being sequenced. Demonstrated separation and identification of dendrimer bound antibody/antigen couples via capillary electrophoresis.</li> <li>437 Aerosol Science - Continued validation of the scattering model theorem by demonstrating imaging of biological cluster particles.</li> </ul>		
<b>Total</b>	8801	
<div> <div>Project CB1</div> <div>Page 7 of 25 Pages</div> <div>Exhibit R-2 (PE 0601384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2500 Lightweight Chemical and Biological Sensors - Investigate 3-D imaging of electromagnetic scattering, nanometaloclusters, polymer membranes, dendrimer-based nanodevices, aptmers, and laser based spectroscopy technologies for next generation, lightweight CB sensor.</li> <li>• 2500 Magnetic Resonance Spectrometer - Effort will purchase a 900 MHz magnetic resonance spectrometer for a university structural biology center.</li> <li>• 1798 Biological Detection - Complete investigations of aptamer-based bio detection for anthrax strains; complete initial evaluations of Multiplex Electronic/Photonic Sensor (MEPS) technology. Initiate investigations of novel technologies to detect and identify BW simulants and agents in environmental matrices. Complete project to identify aerosol materials by analysis of scattering.</li> <li>• 1876 Chemical Detection - Complete investigation of dendrimer-based detection tickets; complete investigations of molecular imprinting for chemical detection. Initiate efforts to detect CW agents using solid-state nano-arrays and analysis of degradation products.</li> <li>• 770 Decontamination - Continue efforts to develop advanced decontamination materials to allow treatment of sensitive equipment, phase transfer materials, and solution chemistry.</li> <li>• 375 Information Technology - Initiate effort to directly couple information into warning system by neural coupling.</li> <li>• 475 Protection - Complete investigations of rate and equilibrium properties of adsorbents for filtration modeling. Initiate investigations of self-assemblies for protective materials.</li> <li>• 448 Supporting Science - Initiate investigation of volatility and material interactions of CW agents and simulants under ambient environmental conditions.</li> </ul>		
Project CB1	Page 8 of 25 Pages	Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>CB1</b>
<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 185 SBIR - Small Business Innovative Research.</li> </ul> <p><b>Total</b> 10927</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1469 Biological Detection - Continue investigations of novel technologies to rapidly and definitively detect and identify BW simulants and agents in environmental matrices. Initiate new effort based on light scattering approach.</li> <li>• 1500 Chemical Detection - Continue efforts to detect CW agents using solid-state nano-arrays and analysis of degradation products.</li> <li>• 1000 Decontamination - Complete investigations of environmentally benign decontamination materials based on peroxycarbonates; transition to development program. Initiate new efforts to develop advanced decontamination materials to allow treatment of sensitive equipment, phase transfer materials, and solution chemistry.</li> <li>• 1000 Information Technology - Continue efforts to directly couple information into warning system by neural coupling.</li> <li>• 605 Protection - Continue investigations of self-assemblies for protective materials. Initiate effort to investigate agent interactions with microporous surfaces at the molecular level using Magic-Angle Spinning Nuclear Magnetic Resonance (MAS-NMR) spectrometry, Xray Photoelectron Spectroscopy (XPS), and thermal desorption methods.</li> <li>• 1000 Supporting Science - Continue investigations of the behavior of CW agents and simulants under ambient environmental conditions. Make available to the 6.2 agent fate program preliminary volatility and environmental adsorption data from new techniques that extend previous methods in dry air only to measure agent vapor concentrations in the presence of relative humidity and contact with porous materials including silica and soil.</li> </ul> <p><b>Total</b> 6574</p> <p>Project CB1</p>		

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<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	56925	91432	68817	54007	52828	56281	54451	Cont	Cont
CB3 CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	15935	21553	27248	33964	33721	26599	31800	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)	9944	12492	11738	5327	5368	4697	4242	Cont	Cont
<div>Project CB1</div> <div>Page 10 of 25 Pages</div> <div>Exhibit R-2 (PE 0601384BP)</div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>				PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>				PROJECT <b>HS1</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
HS1      HOMELAND SECURITY (BASIC RESEARCH)	0	0	25000	0	0	0	0	0	25000

**A. Mission Description and Budget Item Justification:**

**Project HS1 HOMELAND SECURITY (BASIC RESEARCH):** This basic research project emphasizes a better understanding of the threats and risks posed by future bioterrorism activities against the U.S. The proliferation of weapons of mass destruction, to include biological weapons and scientific expertise necessary to develop biological weapons capability, has become one the greatest new threats our nation faces today. Recent terrorism incidents in the U.S. demand a greater emphasis on research to assess the threat potential of classic, emerging and genetically engineered biological threats. Funding for this project supports establishment of a capability for biological terrorism threat assessment research in a Center for Biological Counterterrorism Research. Currently there is no single, coherent DoD or national scientific program focused on assessment of the classical and emerging biological threats from the perspective of counterterrorism. Risk assessment and threat assessment studies of certain biological agents will require dedicated facilities, equipment and personnel, and will ultimately involve some degree of classified work in order not reveal or create defense vulnerabilities. Such a program is not suitable, nor is laboratory capacity available, for placement within existing biodefense programs or facilities.

**FY 2001 Accomplishments: None**

**FY 2002 Planned Program: No planned program**

Project HS1
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>				PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>				PROJECT <b>HS1</b>	
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 25000 Microbial Threat Assessment Basic Research - Conduct technology survey and identify knowledge gaps with respect to biological threat agents; initiate extramural research contract awards for expanded study of basic biology and molecular biology of biological threat agents, with emphasis on identification of virulence factors, pathogenic mechanisms, and structural biology.</li> </ul>									
<b>Total</b> 25000									
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
HS2 HOMELAND SECURITY (APPLIED RESEARCH)	0	0	137000	0	0	0	0	0	137000
HS3 HOMELAND SECURITY (ADV TECH DEV)	0	0	162000	0	0	0	0	0	162000
HS4 HOMELAND SECURITY (DEMVAL)	0	0	55000	0	0	0	0	0	55000
HS6 HOMELAND SECURITY (MANAGEMENT SUPPORT)	0	0	6000	0	0	0	0	0	6000
HS9000 HOMELAND SECURITY PRODUCTION	0	0	30000	0	0	0	0	0	30000
<div style="display: flex; justify-content: space-between;"> <span>Project HS1</span> <span>Page 12 of 25 Pages</span> <span>Exhibit R-2 (PE 0601384BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>				PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>				PROJECT <b>TB1</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH)	19958	25049	23986	20461	21163	20229	20395	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project TB1 MEDICAL BIOLOGICAL DEFENSE (BASIC RESEARCH):** This project funds basic research on the development of vaccines and therapeutic drugs to provide effective medical defense against validated biological threat agents including bacteria, toxins, and viruses. This project also funds basic research employing biotechnology to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Categories for this project include current science and technology program areas in medical biological defense (diagnostic technology, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines) and directed research efforts (anthrax studies and bug to drug identification and countermeasures program).

**FY 2001 Accomplishments:**

- 2976 Diagnostic Technologies - Investigated new medical diagnostic technologies based upon state-of-the-art biotechnological approaches for the enhanced recognition of infections by validated biological threats (bacteria, viruses, and toxins) of military interest including new gene analysis chemistries and immunodiagnostics. Identified new biological markers and host responses that can be used for early recognition of infections including new primer and probe sets against new gene targets. Identified unique host immune markers using in vitro and in vivo models and developed primer and probe sets for these markers.

Project TB1
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Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 312 Therapeutics, Bacterial - Analyzed host cellular and subcellular responses to Bacillus anthracis, Burkholderia mallei, and Yersinia pestis exposure and evaluated cloned heat shock genes as potential targets for therapeutic intervention. Developed methodologies utilizing biochemical (metabolic) processes for assaying in vivo antibiotic activity. Initiated studies to optimize a mouse model for testing established and investigational antibiotics against anthrax.</li> <li>• 5452 Therapeutics, Toxin - Identified sites of molecular action and mechanisms of intervention for therapies for botulinum toxin and staphylococcal enterotoxin B (SEB) threats; developed models for therapeutic intervention. Defined endpoints for in vivo assessment of efficacy of therapeutic intervention for botulinum toxin and SEB and surrogate endpoints of human clinical efficacy. Generated candidate therapeutic moieties for botulinum and SEB toxins using combinatorial chemistry.</li> <li>• 2722 Therapeutics, Viral - Humanized mouse monoclonal antibodies specific for Ebola virus to test as an immunotherapeutic. Investigated mechanisms of filovirus transcription and replication focusing on polymerase as potential target for antiviral therapy.</li> </ul>		
Project TB1	Page 14 of 25 Pages	Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	
		PROJECT <b>TB1</b>

**FY 2001 Accomplishments (Cont):**

- 4652 Vaccines, Bacterial - Investigated pathogenesis (cellular and molecular) and host immune responses; characterized additional virulence factors; continued to define strain diversities; and established correlates of immunity for plague (*Y. pestis*), glanders (*B. mallei*), and anthrax (*B. anthracis*). Identified potential host cell targets for a plague virulence factor and demonstrated mechanism of action in vitro of protective immunity against this virulence factor. Continued to evaluate live attenuated plague strains for their ability to elicit protective immunity. Demonstrated the importance of antibodies to an anthrax virulence protein in protecting host cells against killing by anthrax spores early in the infectious process. Investigated in vivo ability of licensed anthrax vaccine to protect against additional anthrax strains representing geographically diverse isolates. Characterized virulence genes in glanders strains that are responsible for encoding the organism's capsular virulence factor. Developed an in vitro model to examine interactions between *Brucella* and human monocyte cells. Compared the ability of *Brucella* lipopolysaccharide (LPS) to that of *E. coli* LPS for induction of cytokines.
- 982 Vaccines, Toxin - Initiated studies to identify potential neutralizing epitopes in the translocation domains of the botulinum neurotoxins. Investigated the variability of *Clostridium botulinum* strains in terms of their neurotoxic isoforms and the presence of other toxins produced by various strains. Initiated structural and biophysical characterization studies of recombinant protein vaccine antigens. Constructed enzymatically inactivated mutant of ricin A-chain for evaluation as a potential vaccine candidate. Initiated evaluation of adjuvants that may enhance the host immune response to aerosol-administered vaccines and assessed delivery vehicles that may enhance the uptake of aerosol-administered vaccines.

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<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>2862 Vaccines, Viral - Demonstrated a role of cytotoxic T cells in conferring protection against Ebola virus in the mouse model. Initiated investigation into poxvirus immunity to determine feasibility of replacing vaccinia immune globulin (VIG) with monoclonal antibodies and to construct a safe and effective vaccine to replace the vaccinia virus vaccine for variola. Confirmed hypothesis that vaccination with intracellular mature virus particles and extracellular enveloped virus immunogens is required for protection.</li> </ul> <p><b>Total</b>      19958</p> <p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>3444 Diagnostic Technologies - Continue investigation of new medical diagnostic technologies based upon state-of-the-art biotechnological approaches for the enhanced recognition of infections by potential biological threats (bacteria, viruses, and toxins) of military interest including new gene analysis chemistries and immunodiagnostics. Continue to identify new biological markers and host responses that can be used for early recognition of infections including new primer and probe sets against new gene targets. Continue to identify unique host immune markers using in vitro and in vivo models and developed primer and probe sets for these markers.</li> <li>1094 Therapeutics, Bacterial - Evaluate therapeutic indices for new (investigational) antibiotic agents identified by in vitro assays in mouse models. Study the effect of immunomodulators on the host response to B. mallei and Y. pestis candidate vaccines and identify those modulators that are effective in enhancing candidate vaccines. Conduct studies on the effects of established and Investigational New Drug (IND) therapeutic compounds on Brucella in vitro.</li> </ul>		
Project TB1	Page 16 of 25 Pages	Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 4720 Therapeutics, Toxin - Refine and standardize in vivo screening models for assessment of efficacy of therapeutic intervention in botulinum toxin and SEB intoxication and standardize in vitro assays for neutralizing activity of lead inhibitors. Conduct high-output generation of candidate therapeutic moieties for botulinum and SEB toxins using combinatorial chemistry. Evaluate inhibitor delivery strategies and demonstrate in vitro proof-of-concept. Initiate high-throughput screening technology to investigate therapeutic candidates for exposure to ricin toxin.</li> <li>• 2188 Therapeutics, Viral - Determine the therapeutic potential of candidate drugs for treatment of disease caused by filovirus or orthopox infections. Characterize filovirus polymerases as potential antiviral drug targets and incorporate into in vitro assays.</li> <li>• 3099 Vaccines, Bacterial - Obtain genetic sequencing data and establish a database for plague (<i>Y. pestis</i>), glanders (<i>B. mallei</i>), anthrax (<i>B. anthracis</i>) and brucellosis (<i>Brucella</i> species). Evaluate the data for potential for genetic engineering and genetic modification and determine genetic fingerprints (genetic identifiers) of various isolates of the organisms. Evaluate genetically modified strains of these pathogens for their level of virulence in animals and identify genes that encode for novel virulence factors. Expand and characterize strain collections of bacterial threat agents to identify strains that may be resistant to existing vaccines and/or those under advanced development. Characterize in vitro host cell gene expression during infection with plague, glanders, anthrax, and <i>Brucella</i> and identify novel bacterial genes expressed. Test multiagent vaccine constructs in avirulent anthrax and <i>Brucella</i> platforms for immunogenicity in mice.</li> <li>• 1540 Vaccines, Toxin - Complete experiments involving the crystallization of toxins and vaccine candidates for structural studies and biophysical characterization. Complete assessment of novel adjuvants and delivery vehicles for aerosol-administered vaccines. Investigate potential neutralizing epitopes in the translocation domains of botulism neurotoxins.</li> </ul>		
Project TB1	Page 17 of 25 Pages	Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>1540 Vaccines, Viral - Continue investigating poxvirus immunity to determine the feasibility of replacing VIG with monoclonal antibodies and to construct a safe and effective vaccine to replace the vaccinia virus vaccine for variola (smallpox).</li> <li>5000 Anthrax studies - Initiate development and testing of new approaches for the treatment of inhalational anthrax. Focus on two classes of compounds that inhibit the activity of the lethal toxin produced during anthrax infection and on an enzyme target critical for the germination and vegetative life cycle of B. anthracis.</li> <li>2000 Bug to Drug Identification and Countermeasures Program - Conduct research directed toward decreasing the time required to identify and counter biological threats. Focus on rapidly identifying host proteins that are altered by BW pathogens and rapidly developing countermeasures based on how the countermeasures affect the host, outside of their desired effect against the pathogen. This research will utilize structure-based small molecule design, microfluidics-based bioassays, and computational molecular biology and pathway modeling.</li> <li>424 SBIR - Small Business Innovative Research Efforts.</li> </ul> <p><b>Total</b>      25049</p>		
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>4389 Diagnostic Technologies - Apply new diagnostic approaches to the early recognition of infections. Technologies will be compatible with future comprehensive integrated diagnostic systems.</li> </ul>		
Project TB1	Page 18 of 25 Pages	Exhibit R-2 (PE 0601384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TB1</b>
<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1061 Therapeutics, Bacterial - Correlate metabolic measurements as a rapid and sensitive means to detect antibiotic activity with conventional susceptibility determinations and appropriate animal models of infection. Establish collaborative research and development agreements with interested pharmaceutical companies to test new and investigational antibiotics. Initiate evaluation of selected therapeutic compounds against Brucella in vivo.</li> <li>• 5186 Therapeutics, Toxin - Complete high-output generation of candidate therapeutic moieties for botulinum and SEB toxins using combinatorial chemistry. Demonstrate in vivo proof-of-concept for integrated therapeutic approaches in botulinum toxin and SEB intoxication. Select lead ricin inhibitor and prepare toxin-inhibitor crystals for x-ray diffraction analysis.</li> <li>• 2225 Therapeutics, Viral - Develop intervention strategies for filovirus-induced shock and for therapeutic approaches that combine antiviral and anti-shock drug therapy.</li> <li>• 3001 Vaccines, Bacterial - Develop mutations in various agents for in vivo expressed genes to examine role in virulence. Characterize the mechanism(s) of vaccine resistance in selected strains of various agents. Determine mechanisms and correlates of protection with efficacious B. mallei vaccines. Evaluate differences in the course of Brucella infection in different mouse strains. Test multiagent vaccine constructs for immunogenicity in higher animal species.</li> <li>• 1001 Vaccines, Toxin - Compare efficacy of constructs with neutralizing epitopes in other domains of botulinum neurotoxin serotypes E and F with the current subunit vaccine candidates. Evaluate vaccine candidates specifically designed to address host vulnerabilities identified in the lung. Develop vaccine candidates that protect against inhalationally induced incapacitation by selected toxin threat agents.</li> </ul>		
Project TB1	Page 19 of 25 Pages	Exhibit R-2 (PE 0601384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																
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<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 2123 Vaccines, Viral - Complete investigating poxvirus immunity and determine the feasibility of replacing VIG with monoclonal antibodies and constructing a new vaccine to replace vaccinia.</li> <li>• 5000 Anthrax studies - Continue extramural research efforts toward the development and testing of new approaches for the treatment of inhalational anthrax. Focus will continue on two classes of compounds that inhibit the activity of the lethal toxin produced during anthrax infection and on an enzyme target critical for the germination and vegetative life cycle of B. anthracis.</li> </ul> <p><b>Total</b>        23986</p>																																							
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 7%;"><u>FY 2001</u></th> <th style="width: 7%;"><u>FY 2002</u></th> <th style="width: 7%;"><u>FY 2003</u></th> <th style="width: 7%;"><u>FY 2004</u></th> <th style="width: 7%;"><u>FY 2005</u></th> <th style="width: 7%;"><u>FY 2006</u></th> <th style="width: 7%;"><u>FY 2007</u></th> <th style="width: 7%;"><u>To Compl</u></th> <th style="width: 7%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</td> <td>22428</td> <td>36513</td> <td>38386</td> <td>24085</td> <td>25097</td> <td>17826</td> <td>18148</td> <td>Cont</td> <td>Cont</td> </tr> <tr> <td>TB3 MEDICAL BIOLOGICAL DEFENSE (ADV TECH DEV)</td> <td>22394</td> <td>29919</td> <td>34200</td> <td>50789</td> <td>45560</td> <td>40585</td> <td>40675</td> <td>Cont</td> <td>Cont</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	22428	36513	38386	24085	25097	17826	18148	Cont	Cont	TB3 MEDICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	22394	29919	34200	50789	45560	40585	40675	Cont	Cont
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																														
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<div style="display: flex; justify-content: space-between;"> <span>Project TB1</span> <span>Page 20 of 25 Pages</span> <span>Exhibit R-2 (PE 0601384BP)</span> </div>																																							

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>				PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>				PROJECT <b>TC1</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH)	9610	9815	8559	9533	9830	10926	11017	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project TC1 MEDICAL CHEMICAL DEFENSE (BASIC RESEARCH):** This project emphasizes understanding of the basic action mechanisms of nerve, blister (vesicating), blood, and respiratory agents. Basic studies are performed to delineate mechanisms and sites of action of identified and emerging chemical threats to generate required information for initial design and synthesis of medical countermeasures. In addition, these studies are further designed to maintain and extend a science base. Categories for this project include science and technology program areas (Pretreatments, Therapeutics, and Diagnostics) and directed research efforts (Low Level Chemical Warfare Agent Exposure and Fourth Generation Agents).

Project TC1
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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 2540 Pretreatment - Evaluated catalytic scavengers designed by site-directed mutagenesis. Developed candidate next generation pretreatments using knowledge gained from studies in molecular modeling and site-directed mutagenesis. Identified new candidate compounds with potential as pretreatments for vesicant injury based on current research strategies.</li> <li>• 1399 Therapeutics - Developed science base to identify specific factors leading to and/or preventing neuronal death in status epilepticus caused by nerve agents. Identified potential synergistic interactions of midazolam with anticholinergic drugs in rodent species.</li> <li>• 4164 Low Level Chemical Warfare Agent Exposure - Identified data gaps relevant to the pathological and behavioral effects of low level chemical warfare nerve agent exposures. Investigated possible cellular mechanisms of low level chemical warfare agent injury. Explored highly sensitive diagnostic techniques to determine exposure to low levels of chemical warfare agents and subsequent physiological and toxicological effects.</li> <li>• 1507 Fourth Generation Agents - Determined mechanism by which Fourth Generation Agents produce toxicity, which is not responsive to current nerve agent countermeasure pretreatments, using the knowledge gained from studies in molecular modeling and site-directed mutagenesis.</li> </ul>		
<b>Total</b>	9610	
<div> <div>Project TC1</div> <div>Page 22 of 25 Pages</div> <div>Exhibit R-2 (PE 0601384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 2082 Pretreatments - Evaluate organophosphate anhydrolase enzyme for potential use as catalytic nerve agent scavenger. Utilize in vitro screening of identified compounds for potential use as pretreatments for vesicant exposure.</li> <li>• 1476 Therapeutics - Identify target sites for neuroprotection. Identify therapeutic targets for candidate compound combination therapies. Initiate determination of the optimal hypochlorite concentration for use in decontaminating chemical agent-exposed skin and agent-contaminated wounds.</li> <li>• 4500 Low Level Chemical Warfare Agent Exposure - Continue studies on identification of chronic pathological and behavioral effects of low level chemical warfare agent exposures. Investigate putative mechanisms of low level toxicity. Develop consensus for a coherent methodology for studies across endpoints and model species to permit integration of disparate endpoints, post-hoc analysis of research results, and extrapolation to higher animal species.</li> <li>• 1000 Fourth Generation Agents - Develop strategies to improve efficacy of current medical countermeasures against Fourth Generation Agents.</li> <li>• 591 Diagnostics - Develop new assays for sulfur mustard adducts and for diagnosing cyanide exposure.</li> <li>• 166 SBIR - Small Business Innovative Research Efforts.</li> </ul>		
<b>Total</b>	9815	
<div>Project TC1</div> <div>Page 23 of 25 Pages</div> <div>Exhibit R-2 (PE 0601384BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>	PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>	PROJECT <b>TC1</b>
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 2091 Pretreatments - Develop next generation pretreatments using knowledge gained from studies in molecular modeling and site-directed mutagenesis. Continue delineation of pathways of injury and potential pretreatment pharmaceutical intervention sites.</li> <li>• 1618 Therapeutics - Incorporate biomarker panels into screening modules. Evaluate combination therapies for neuroprotection efficacy. Screen antidotes representing new strategies to improve medical countermeasures against conventional and emerging agents.</li> <li>• 4000 Low Level Chemical Warfare Agent Exposure - Continue studies of chronic neurological and/or behavioral effects of chronic low level chemical warfare agent exposures. Identify potential toxic endpoints in low dose chemical warfare agent exposures. For verified endpoints, identify the mechanism(s) and biochemical pathway(s) involved in the generation of endpoint pathology.</li> <li>• 850 Diagnostics - Continue development of leading edge assays for sulfur mustard adducts and for diagnosing cyanide exposure. Initiate studies for a far-forward diagnostic capability.</li> </ul>		
<b>Total</b>	8559	
<div> <div>Project TC1</div> <div>Page 24 of 25 Pages</div> <div>Exhibit R-2 (PE 0601384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA1 - Basic Research</b>				PE NUMBER AND TITLE <b>0601384BP CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</b>				PROJECT <b>TC1</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	13819	18486	17974	17150	16569	18421	18572	Cont	Cont
TC3 MEDICAL CHEMICAL DEFENSE (ADV TECH DEV)	9968	11302	12156	13423	13773	12907	13011	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project TC1</span> <span>Page 25 of 25 Pages</span> <span>Exhibit R-2 (PE 0601384BP)</span> </div>									

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## **BUDGET ACTIVITY 2**



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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/  
BA2 - Applied Research**

PE NUMBER AND TITLE

**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED  
RESEARCH)**

COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		93172	146431	262177	95242	94494	92528	91171	Continuing	Continuing
CB2	CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	56925	91432	68817	54007	52828	56281	54451	Continuing	Continuing
HS2	HOMELAND SECURITY (APPLIED RESEARCH)	0	0	137000	0	0	0	0	0	137000
TB2	MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	22428	36513	38386	24085	25097	17826	18148	Continuing	Continuing
TC2	MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	13819	18486	17974	17150	16569	18421	18572	Continuing	Continuing

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	
<p><b>A. <u>Mission Description and Budget Item Justification:</u></b> The use of chemical and biological weapon systems in future conflicts is an increasing threat to the United States. Funding under this PE sustains a robust program, which reduces the danger of a chemical and/or biological (CB) attack and enables U.S. forces to survive and continue operations in a CB environment. The medical program focuses on development of vaccines, pretreatment and therapeutic drugs, and on casualty diagnosis, patient decontamination, and medical management. In the non-medical area, the emphasis is on continuing improvements in CB defense materiel, including contamination avoidance, decontamination, and protection systems. This program also provides for conduct of applied research in the areas of real-time sensing and immediate biological countermeasures. This PE also provides for investigative efforts to perform a Homeland Security requirements process, concept and technology demonstrations of new system concepts that will shape the development for environmental monitoring, medical surveillance, and data mining/fusion/analysis subsystems. The work in this PE is consistent with the Joint Service NBC Defense Research, Development, and Acquisition (RDA) Plan. Efforts under this PE transition to and provide risk reduction for Advanced Technology Development (PE 0603384BP), Demonstration/Validation (PE 0603884BP), and Engineering and Manufacturing Development (PE 0604384BP). This project includes non-system specific development directed toward specific military needs and therefore is correctly placed in Budget Activity 2.</p>		
Page 2 of 52 Pages		Exhibit R-2 (PE 0602384BP)

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA2 - Applied Research**

PE NUMBER AND TITLE

**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED  
RESEARCH)****B. Program Change Summary:**

		<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>
Previous President's Budget (FY 2002 PB)		81061	125481	105680
Appropriated Value		80000	147281	0
Adjustments to Appropriated Value		0	0	0
a. Congressional General Reductions		-560	-850	0
b. SBIR/STTR		-1373	0	0
c. Omnibus or Other Above Threshold Reductions		13000	0	0
d. Below Threshold Reprogramming		2284	0	0
e. Rescissions		-179	0	0
Adjustments to Budget Years Since FY 2002 PB		0	0	156497
Current Budget Submission (FY 2003 PB)		93172	146431	262177

**Change Summary Explanation:**

**Funding:** FY01 - Congressional increase (+\$13,000K CB2); SBIR adjustment (-\$1,373); Congressional general reduction (-\$560K); Recissions (-\$179K); Below threshold adjustments (+\$2,284K).

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

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BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA2 - Applied Research**

PE NUMBER AND TITLE

**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED  
RESEARCH)****Funding (cont.)**

FY02 - Congressional adjustments to support various CBD applied research programs (+\$21,800K CB2).  
Congressional general reductions (-\$850K).

FY03 - Increases to the technology base to fund a Homeland Security Support effort identified in the new Project HS2 (+\$137,000K). Increases to the technology base for key science and technology efforts in support of the Administration's priorities (Enhanced Chemical and Biological Defense Initiatives) (+\$12,750K, CB2; +\$5,750K, TB2; +\$1,500K, TC2). Inflation adjustments to reflect current assumptions (-\$503K).

**Schedule:****Technical:****C. Other Program Funding Summary:** See section B in the R2A's

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA2 - Applied Research**

PE NUMBER AND TITLE

**0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED  
RESEARCH)****D. Execution: (Organizations receiving 10% or more of execution year funding)**

Labs/Centers:

TB2 - U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, MD; CB2 - Soldier Biological Chemical Command, APG-EA, MD; CB2 - Naval Research Lab, Washington, DC

Universities:

CB2 - Texas Tech, Lubbock, TX, and University of South Florida, Tampa, FL

FFRDCs: None

Contractors: None

Other: None

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>				PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>				PROJECT <b>CB2</b>				
COST (In Thousands)				FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CB2	CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)			56925	91432	68817	54007	52828	56281	54451	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CB2 CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH):** This project addresses the urgent need to provide all services with defensive materiel to protect individuals and groups from threat chemical-biological (CB) agents in the areas of detection, identification and warning, contamination avoidance via reconnaissance, individual and collective protection, and decontamination. The project provides for special investigations into CB defense technology to include CB threat agents, operational sciences, modeling, CB simulants, and nuclear, biological, chemical (NBC) survivability. This project focuses on horizontal integration of CB defensive technologies across the Joint Services. The Defense Technology Objectives (DTOs) provide a means to shape the development of selected technologies within this project.

Project CB2
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Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1223 Advanced Adsorbents for Protection Applications (DTO-CB08) - Prepared and evaluated single adsorbent materials and bed compositions identifying the optimal adsorbent bed composition for mask filters in the Joint Service General Purpose Mask (JSGPM) against both Toxic Industrial Chemicals (TICs) and CB agents.</li> <li>• 805 Enzymatic Decontamination (DTO-CB09) - Optimized formulations of V-agent (persistent nerve agent) enzymes and H-agent (blister) reactive materials for application in dispersion systems and identified new V-agent enzymes and increased the activity of enzymes with hydrolytic activity on V-agents. Continued the search for H-agent active enzymes.</li> <li>• 2050 Chemical Imaging Sensor (DTO-CB19) - Demonstrated a 16-pixel spectrometer in real-time operation at 100 Hz (on-line process of data). This capability represents the first time use of high performance computers for real-time on-line processing for this application. System is capable of being mounted on platforms with objective speeds in excess of 1,000 miles per hour with an imaging capability.</li> <li>• 2789 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Demonstrated BSPS at Joint Field Trials (JFT). Eight bacterial and viral materials gene probe assays were developed and evaluated for the automated platforms. Identified throughput issues with automated gene probe based platform. Identified technological issues in protein separation and concentration affecting sensitivity and interferent rejection of background materials in electrospray ionization mass spectroscopy.</li> <li>• 319 Standoff Biological Aerosol Detection (DTO-CB35) - Initiated analysis of existing data and identified top candidates for further evaluation to provide improved biological standoff capability. Identified and developed key performance requirements to develop biological standoff capability.</li> </ul>		
Project CB2	Page 7 of 52 Pages	Exhibit R-2 (PE 0602384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>710 Universal End of Service Life Indicator for NBC Mask Filters (DTO-CB36) - Identified and screened several color-changing passive (non-powered) technologies against representative chemical agent, simulant, and toxic industrial organic vapors and acid gasses. Initiated screening of two alternative candidate general-indicator technologies, metalloporphyrins, and polymerized diacetylenes.</li> <li>1319 Joint Chemical Biological Agent Water Monitor (JCBAWM) (DTO-CB37) - Completed preliminary design of integrated CB water monitor based on the most mature technology currently available, using an open architecture to ensure that new and improved technology can be used to update the overall system with minimal effort. Developed test protocols for testing system. Initiated development of transition criteria for Milestone A decision.</li> <li>4750 Man-portable Detectors - Continued insertion of semi-conductive metal oxide (SMO) technology (and Surface Acoustic Waves (SAWs) when required) into a chemical detector brassboard. Based on user inputs, determined the operational parameters of a man-portable detection system. Joint Service requirements were used to determine the response parameters and operating environment. Demonstrated an integrated prototype detector system for CW agents under laboratory and field conditions.</li> <li>13000 CB Countermeasures - Completed first year research in CB Countermeasures with 25 diverse tasks in CB detector development, CB medical toxicology and vaccine research, fast detection methods for biological contaminants in food, new protective materials development, novel decontamination methods, novel blood assays for biologicals, improved methods for Weapons of Mass destruction first responders, improved hospital response techniques, and modeling of biological contamination spread.</li> <li>1561 Improved CB Detection - Enhanced performance of high sensitivity passive stand-off detector by increasing hardware sensitivity, characterizing and removing background variables, and improving system detection software.</li> </ul>		
Project CB2	Page 8 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li> <p>2200 Collective Protection - Completed Front-End Analysis (FEA) and Master Plan (MP) model for NBC collective protection systems identifying requirements and prioritizing technologies for system development in terms of maturity, risk, applicability, and cost. Continued Residual Life Indicator (RLI) chemical sensor testing with simulants, TICs, and agents. Produced and tested immobilized filter beds. Completed measurement of breakthrough and equilibrium data of current adsorbents against TICs and assessed adsorptive/chemisorptive properties. Conducted lab scale testing to validate the Pressure Swing Adsorption model. Fabricated and evaluated advanced materials, structural, and hermetic seal technologies for shelter systems.</p> </li> <li> <p>8111 Decontamination - Completed demonstration of sensitive equipment decontamination methodology and finalized transition of technology for Block I of the Joint Service Sensitive Equipment Decontamination (JSSED) program. Selected technologies to be demonstrated for the decontamination of sensitive interiors (JSSED Block II) focusing on thermal approaches. Evaluated approaches for operational decontamination of sensitive equipment and interiors on the move (JSSED Block III). Investigated alternative approaches to improve efficiency of V-agent (persistent nerve agent) enzymes. Broadened the scope of enzymatic decontamination processes evaluating potential systems for non-traditional agents. Validated oxidative processes in aqueous and mixed/aqueous/organic solvent systems as solutions, emulsions or microemulsions. Examined dendritic assembly systems incorporating mono ethanol amine functionality and performed preliminary agent challenges. Continued the evaluation of novel solid matrices. Continued efforts to determine the fate of agent on common environmental surfaces associated with fixed site facilities. Conducted study to evaluate the hazard posed by potential reaerosolization of BW materials. Transferred oversight of this area to Supporting Science and Technology Business Area.</p> </li> </ul>		
Project CB2	Page 9 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>1647 Individual Protection, Clothing - Completed material test procedures which allow detailed characterization of all permselective membranes and a predictive mechanistic hypothesis, and demonstrated several excellent barrier membranes produced via relatively simple chemical modification of Nafion™. Initiated a Dual Use Science and Technology (DUST) effort to manipulate and optimize textile structures using current nanofiber technology and electrostatic treatments to reduce aerosol permeation. Investigated nanofiber membrane bonding/integration methods and conducted aerosol tests on membranes produced. Identified toxic industrial chemicals of interest and developed test methodology for assessing the effectiveness of protective clothing against those chemicals. Conducted investigations to identify polymers and determine guidelines for optimal ions, doses, and other parameters for enhancing the permselectivity of membranes. Initiated a DUST effort to produce membrane based protective garments for civilian and military use.</li> <li>609 Individual Protection, Masks - Constructed a parametric skeleton model of candidate helmet/mask concepts to help identify those with most potential for long-term solutions. Conducted technology feasibility studies for numerous technologies identified during the Individual Protection Front-End Analysis (IP FEA) to determine their applicability for future protective masks.</li> </ul>		
Project CB2	Page 10 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li> <p>3712 Modeling and Simulation - Developed models for simulation of CB weapons effects on joint force operations for incorporation into advanced simulations such as Joint Conflict and Tactical Simulation (JCATS), Joint Simulation System (JSIMS), Joint Modeling and Simulation System (JMASS), and Joint Warfare System (JWARS). Initiated coupling of CB environment and high resolution meteorological models for incorporation of CBW hazard prediction/tracking into forward-deployed meteorological forecast/nowcast operations. Continued development of advanced CBW environment models for more accurate, higher-resolution atmospheric transport and fate predictions in complex and urban terrain for battlespace awareness and contamination avoidance. Developed additional models for Joint Service CB defense equipment for application in Simulation Based Acquisition (SBA). Transitioned current version of the Simulation, Training, and Analysis for Fixed Sites (STAFFS) model to the Center for Army Analysis for evaluation. Enhanced development of STAFFS model for simulation of CBW effects on operations at Aerial Port of Debarkation (APOD) and Sea Port of Debarkation (SPOD). Continued validation studies and software documentation materials for Vapor, Liquid, Solid Tracking (VLSTRACK) version 3.</p> </li> <li> <p>1860 Biological Identification and Reagents - Completed analysis of accumulated ambient background data from United Kingdom and Portal Shield Program and identified gaps for further study as indicated by analysis. Completed generation and screening of recombinant antibodies against selected bio agents using biased genetic libraries. Incorporated recombinant antibodies into Enzyme Linked Immuno Sorbent Assay (ELISA) and bio-sensors for test/evaluation, and transitioned best candidates to Critical Reagents Program (CRP).</p> </li> <li> <p>1150 Food and Water - Evaluated alternative technologies; e.g., surface enhanced Raman, molecular imprinted polymers, gas chromatograph-ion mobility spectrophotometer for risk reduction in support of the Joint Chemical Biological Agent Water Monitor (JCBAWM).</p> </li> </ul>		
Project CB2	Page 11 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>1847 Supporting Science and Technology - Completed initial toxicology study using simulant powder and initiated persistent nerve agent aerosol toxicology study in the new nose-only exposure chamber for extremely hazardous aerosols. Measured quantitative performance of candidate aerosol collectors for advanced point biodetection technology. Demonstrated a new aerosol collector using mini-scale manufacturing technology that substantially reduces power consumption compared to fielded collectors while maintaining high collection efficiency over the respirable particle size from 1-10 micrometers diameter. Continued to provide controlled biosimulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for the JFT.</li> <li>2216 Low Level Chemical Agent Operational Toxicology Studies - Published non-persistent nerve agent exposure data analyses (lethality endpoint) on rats. Completed non-persistent nerve agent miosis threshold studies in rats for extended exposure durations. Initiated second generation nerve agent potency ratio studies in rats for toxicological effects to characterize concentration-time Ct relationships for low-level, longer vapor duration exposures. This data is required to validate and verify alarm and warning levels for detector and protection systems.</li> </ul>		
Project CB2	Page 12 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>5047 Leap Ahead Technologies - Conducted technology feasibility studies for numerous technologies identified during the IP FEA to determine their applicability for future protective masks. Investigated advanced respiratory and percutaneous protection technologies identified in IP FEA to reduce thermal load and breathing resistance. Selected new simulant for emerging agents. Published interim assessment of data gaps in threat agent data and needs for improved simulants in CB defense materiel development to define FY02 program priorities. Completed a simulant database for selecting appropriate simulants in materiel development. Initiated assessment of data gaps in threat agent data and needs for improved simulants in CB defense materiel development. Instituted a simulant database for selecting appropriate simulants in materiel development and established a repository for chemical simulants and a standard biological simulant laboratory. Overcame technology barriers in developing simulants for emerging agents. Continued efforts in developing force differentiation assay (FDA). Refined discrimination algorithms and chamber test optical fluorescence/shape analysis and pyrolysis-gas chromatography-ion mobility spectrometry; two promising technologies capable of downsizing and providing classification among biological particles without fluids. Completed initial analysis of RADAR multi-mission sensor and identified other disparate sensors. Initiated exploration of chip-based phylogenetic assay for highly multiplexed biological agent detection.</li> </ul> <p><b>Total</b>      56925</p>		
<p>Project CB2</p> <p>Page 13 of 52 Pages</p> <p>Exhibit R-2 (PE 0602384BP)</p>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1100 Advanced Adsorbents for Protection Applications (DTO-CB08) - Evaluate composite adsorbent beds and select optimal compositions for single pass filter applications for Individual Protection (IP) and Collective Protection (CP) against Toxic Industrial Chemicals (TIC) and CB agents.</li> <li>• 900 Enzymatic Decontamination (DTO-CB09) - Complete development of enzymatic formulations and transition to either the Joint Service Family of Decon Systems as a product improvement or to follow-on efforts under the Superior Decontamination System program. Potential H-agent enzymes have been identified, optimization is in progress.</li> <li>• 2400 Chemical Imaging Sensor (DTO-CB19) - Demonstrate a 16-pixel spectrometer operating at 360 Hz with off-line processing of data. Initiate planning to include preparing for a Milestone A decision on the technology for transition of brassboard design and build in support of Joint Service Wide Area Detection (JSWAD) program.</li> <li>• 1600 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Redesign and initiate modification of FY01 bioagent Polymerized Chain Reaction (PCR) breadboard for 20-minute sample processing and multifrequent, multiplexed (MM) capabilities. Develop six MM bioagent PCR assays (three containing two gene targets each for three bioagents and three containing a single gene target for each bioagent in a binary mixture from three bioagents).</li> <li>• 1800 Standoff Biological Aerosol Detection (DTO-CB35) - Complete establishment of system requirements and conduct down selection based on weighted criteria. Establish technical potential of top ranked technologies. Perform testing, analyze data, and identify strengths and weaknesses on the top five rated technologies for the next generation standoff system.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>800 Universal End of Service Life Indicator (ESLI) for NBC Mask Filters (DTO-CB36) - Develop baseline data characterizing the performance of the most promising ESLI technologies. Assess performance parameters such as reaction time, range of detection, and effects of temperature and humidity using carbon bed test cells; select best candidate technologies based on baseline data.</li> <li>3100 Joint Chemical Biological Agent Water Monitor (JCBAWM) (DTO-CB37) - Complete construction of initial breadboard. Complete testing to identify shortfalls. Demonstrate technologies and transition technologies to Advanced Technology Development.</li> <li>4000 Environmental Fate of Agents (DTO-CB42) - Identify standard construction and natural environmental materials and initiate study interactions of these materials with VX (nerve) using novel in situ methods. Conduct a field test with VX (nerve), GD (nerve), and HD (blister) agents. Develop refined laboratory methodologies to support these studies. Define previously unaccounted environmental loss mechanisms and provide results for improvement of hazard modeling. Refine relevant physical property data related to chemical hazard evolution.</li> <li>1000 Chemical and Biological Warfare Effects on Operations (DTO-CB43) - Test and finalize fighter base representation. Expand development of Aerial Port of Debarkation (APOD) methodology. Start preliminary data gathering and development of Sea Port of Debarkation (SPOD) model. Continue model infrastructure development and detailed operations effect (work/rest cycle, shift change, Mission Oriented Protective Posture (MOPP), dewarn, etc.).</li> <li>1600 Oxidative Decontamination Formulation (DTO-CB44) - Optimize oxidative formulations using a peroxycarbonate approach and evaluate commercial catalysts to improve oxidation rates for peracid-based decontaminants for use as a replacement for DS-2. Begin kinetics, toxicity, and material compatibility testing.</li> </ul>		
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1200 Self-Detoxifying Materials for Chemical and Biological Protective Clothing (DTO-CB45) - Investigate the use of N-halamine fabric treatment for the detoxification biological and chemical agents. Identify and incorporate color change sensors for agent deactivation into membranes and test for effectiveness. Investigate the use of hyperbranched nanoreactors for agent deactivation. Select reactive nanoparticles and formulate candidate films and fibers for improved barrier protection.</li> <li>• 2800 Air Purification Systems - Initiate development of test apparatus and methodology for testing anti-microbial filters/treatments for collective and individual protection. Perform modeling and testing of lab- and sub-scale anti-microbial air purification devices, which have potential to enhance biosafety and reduce operating costs associated with air purification.</li> <li>• 3500 Bioinformatics - Adapt bioinformatic approaches developed for the human genome project to produce meaningful generalizations about the large number of candidates that can be potentially used for biological threat agents and their varied or engineered properties. Begin integrating comprehensive and interactive databases maintained and updated with fundamental properties of biological agents of military interest. Initiate development of data mining tools to analyze microbial information specifically tailored to military assessment and decision making for CB defense. Begin the development of predictive algorithms embedded into databases developed above to understand biological threats, allow generalizations, assess risk of emerging biological threats, and suggest the course of defense response under specific circumstances (e.g., pathogenic genes in unnatural host context, or potential threat of engineered genomes).</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>CB2</b>
<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 9000 Joint Biological and Chemical Terrorism Response Project - Continue development of rapid anthrax test method for blood and environmental samples initiated in CB Countermeasures. Initiate development of rapid test for smallpox and plague. Complete revision of medical training and reference for treatment of chemical and biological exposures for non-military hospitals. Continue development and initial testing of the wide area biological counterterrorism surveillance and detection tool. Develop protocols for safe transport of biologically contaminated clinical samples. Continue development and initial testing of a transportable fiber optic detector for biological threat agents found in the field. Continue research into identification of the factors affecting bioterrorism toxicants and toxins. Continue assessment and recommendations for hospital hygiene practices dealing with bioterrorism. Complete the selection of biological and chemical isolation suits for bioterrorism response.</li> <li>• 1000 Common Asset for Biological Security - Develop genome based bioinformatics tools, assess performance, and apply to gene chip detection/identification technologies.</li> <li>• 3500 CB Countermeasures - Continue investigations into mechanisms of cell death after exposure to chemical and biological agents. Continue development of non-woven protective suits for response to chemical and biological threats. Continue investigations into feasibility of employing selenium bound receptors to destroy and eliminate infectious biological agents. Continue development of embedded miniature chemical detectors for employment in critical and sensitive sites.</li> <li>• 1000 Integrated Detection of Energetic and Hazardous Materials - Build, test, and refine Cylindrical Ion Trap Mass Spectrometer (CITMS). Continue to test Ion Trap Mass Spectrometer (ITMS) methodologies for the point detection of BW agents. Develop theoretical limits of detection via neutron initiated gamma-ray spectroscopy. Investigate application of advanced transforms on various detection methodologies.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 6000 Biological Identification - Continue development of Force Discrimination Assay (FDA). Develop and test concepts toward automation of chip-based phylogenetic analysis of biological materials. Initiate feasibility study to determine technological issues associated with microwave spectroscopy of biological materials under ambient conditions. Explore novel concepts in protein separation and concentration technology to increase sensitivity and reduce interference from background materials in electrospray ionization mass spectroscopy. Develop database and validation methodology for multiple gene target reagents for biological agents. Evaluate quantum dot technology for application to enhance antibody ticket technology for improved stability and sensitivity. Identify optimum combinatorial peptides as biological recognition elements and evaluate against traditional reagents.</li> <li>• 1000 CB Regenerative Air Filtration System - Initiate modeling and testing of lab- and sub-scale temperature swing adsorption (TSA) air filtration devices, which have potential to reduce operating cost, logistics tail, and labor requirements associated with frequent filter changes.</li> <li>• 1045 Collective Protection, Filtration - Continue chemical sensor Residual Life Indicator (RLI) testing and start physical sensor testing. Continue determination of TIC breakthrough and equilibrium testing for advanced adsorbents. Initiate proof-of-principle testing and evaluation of 50 CFM pressure-temperature swing filter to validate model. Demonstrate single pass filter concepts using nano-materials. Initiate evaluation of electrostatic filter particulate/aerosol capture enhancement. Determine degradation effects of TICs on HEPA filters and ways to mitigate. Start assessing feasibility of open and closed circuit air supply and rebreather technologies. Assess effects of chemical agents and TICs on ceramic ion membranes; assess oxygen generation and carbon dioxide scrubbing technologies.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1100 Collective Protection, Shelters - Continue development and evaluation of advanced shelter materials (shell, support, airlocks, liner, seams, and seals). Initiate development and assessment of chemistries for self-decontaminating shelter materials. Assess and mitigate failure mechanisms of shelter materials from conventional weapons effects.</li> <li>• 1316 Sensitive Equipment, Decontamination - Continue developmental efforts to address JSSED Block II and III approaches focusing on thermal and plasma technology and spot cleaning methodology using non-ozone depleting solvents with reactive solid suspensions.</li> <li>• 1068 Solution Chemistry, Decontamination - Develop solution approaches for Superior Decontamination Systems combining novel chemical and biochemical technologies into a unified approach.</li> <li>• 881 Solid Phase Chemistry, Decontamination - Evaluate the physical limitations of novel solid phase technology for decontamination operations. Areas under investigation include nanoscale metal oxides and zeolites. Implement findings from these studies into other areas of the program and determine the best future uses for these materials.</li> <li>• 3075 Individual Protection, Clothing - Fabricate uniforms from the best candidate aerosol threat mediation materials that will then be characterized for their system aerosol performance. Initiate the testing of fielded and developmental protective garment materials to evaluate their effectiveness against selected TICs and particulate aerosols. Conduct laboratory trials to enhance the permselectivity of membranes by ion implantation, and characterize the material physical properties and CB agent protection capabilities of those trial membranes. Demonstrate through a DUST effort the large scale production of protective membrane-based garments for military and civilian applications through the fabrication of numerous and varied garment items. Identify the most promising permselective membrane candidates and initiate the characterization of those candidates.</li> </ul>		
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>1515 Individual Protection, Masks - Conduct helmet/mask long-term model concept feasibility assessment. Initiate the development of concepts for the next generation general purpose mask. Compare existing filtration media with reactive iodine media with respect to biocidal efficacy and in physical properties (such as pressure drop and dust/particulate removal), and initiate development of conceptual combined biocidal/dust filter. Screen sorbent media structures identified during the Individual Protection Front-End Analysis (IP-FEA) and follow-on surveys and select best candidates for further development. Screen advanced lens materials and coating technologies identified in the IP-FEA and follow-on surveys, and identify best candidates for further development. Investigate new technologies and concepts for protective masks to improve protection, flow dynamics, heat and moisture transfer, and fogging.</li> <li>1750 CB Battle Management, Information Systems Technology (IST) - Conduct Battle Management Front End Analysis to identify optimum investment strategy. Complete analysis/report on FY01 tests of non-CB sensors against CB simulant disseminations. Expand database on non-CB sensor performance through measurement against additional dissemination approaches. Conduct studies to assess value added through data fusion of networked multiple same-type disparate sensors and multiple different disparate sensors.</li> <li>3000 CB Environment, IST - Complete methodology documentation and validation of VLSTRACK. Increase computational speed and concentration fluctuation representation in next-generation hazard evolution model MESO (small scale used to measure atmospheric motion) with concurrent validation. Improve high resolution computational fluid dynamics model (CBW-CFX) to address realistic droplet size distributions and biological agent decay. Initiate coupling of numerical weather prediction models with existing CBW dispersion codes. Initiate refinement of hazard evolution codes to better incorporate effects of the environment on chemical agents.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1000 CB Planning, Training, Analysis, IST - Initiate simulation hazard modeling for systems and forces via distributed simulations systems. Initiate examination of sensitivity of hazard evolution/prediction models for agent toxicity.</li> <li>• 1500 Simulation Based Acquisition, IST - Identify and plan for highest priority prototyping demonstrations; initiate coupling of CBD commodity area object models with demonstrated prototyping system. Initiate definition of performance and technical specifications of an eventual virtual prototype system to improve acquisition of CBD materiel.</li> <li>• 4370 Integrated CB Point Detection - Characterize biomarkers observed in Py-GC-IMS sensors against performance matrix of sensitivity, selectivity, and interference rejection for optimal design trade-off analysis. Initiate exploration of new concepts for small, combined chemical and biological identifiers. Evaluate and develop novel concepts, methodologies, and techniques for biological discrimination, advanced aerosol handling, and triggering capabilities for chemical aerosols.</li> <li>• 4500 Biological Standoff - Investigate novel approaches to detection and discrimination of biological aerosols in standoff mode. Examine application of improved laser sources and methodologies and develop spectral database and methodologies to support assessment of new approaches such as Brillouin scattering, Mueller matrix Light Detection and Ranging (LIDAR), and millimeter wave spectroscopy. Investigate potential applicability of UV and IR imaging.</li> <li>• 2800 Integrated CB Standoff Detection - Initiate a program to develop technology to detect the presence of CBW contaminants on surfaces, for use in vehicular and handheld systems. Initial studies will focus on active and passive optical technologies that could be employed on or from a vehicular platform. Conduct assessment of standoff technologies that may be implemented simultaneously against chemical and biological agents.</li> </ul>		
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>2600 Aerosol Technology - Continue to measure quantitative performance of candidate aerosol collectors for advanced point biological detection technology. Initiate the design of a new generation of aerosol concentrators using mini-machining technology to reduce size, power consumption, and weight, in order to meet stringent requirements for advanced miniature detection systems. Initiate design of advanced aerosol inlets to meet Joint Service requirements for high collection efficiency over the respirable particle size range at wind speeds up to 60 mph. Continue to provide controlled biological simulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for the Joint Field Trials (JFT).</li> <li>3100 Threat Agents - Continue assessment of gaps in threat agent data, and identify requirements for improved simulants in CB defense materiel development. Initiate a program of synthesis, toxicology screening, and characterization of new threat materials (to include persistence properties of novel agents) identified as urgent needs while continuing assessment of long-term needs. Initiate validation studies on simulant BG spores, improvement of simulant Erwinia herbicola, and selection of new simulants for novel chemical agent aerosols.</li> <li>5000 Low Level Chemical Agent Operational Toxicology Studies - Complete meiosis threshold studies for second generation agents (GF) in rats over extended exposure durations. Complete GF potency ratio studies on rats. Initiate non-rodent animal studies on G agents to support the extrapolation of data to humans. Develop methodology for third generation agents (VX) inhalation studies to characterize Ct relationships for low level longer duration exposures. Develop CWA tissue dose metric to quantify exposure and predict toxicological response.</li> </ul>		
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<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>2965 Fourth Generation Agents (FGA) - Modify point detection systems to enhance performance against new chemical targets and characterize effect of modifications on performance to existing chemical targets and on interference rejection. Broaden spectral knowledge base in order to predict performance of active and passive IR sensors for detection of surface contamination. Examine novel materials and material treatment solutions to decrease penetration of aerosol particulates through overgarments. Examine novel material treatment solutions to decrease penetration of aerosol particulates through overgarments.</li> <li>1547 SBIR - Small Business Innovative Research efforts.</li> </ul>		
<b>Total</b>	91432	
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<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1214 Advanced Adsorbents for Protection Applications (DTO-CB08) - Test and transition optimum material/bed configurations for regenerative filter, single pass, and catalytic based air-purification applications.</li> <li>• 2000 Biological Sample Preparation System (BSPS) for Biological Identification (DTO-CB20) - Complete the initial modification and test the breadboard. Demonstrate the FY02 multifrequent, multiplexed (MM) assays on the system. Optimize the FY02 MM bioagent PCR assays.</li> <li>• 3500 Standoff Biological Aerosol Detection (DTO-CB35) - Construct and characterize breadboards based on the results of the downselect and user input. Initiate field testing and evaluation of final breadboards.</li> <li>• 4000 Environmental Fate of Agents (DTO-CB42) - Determine VX fate on concrete under lab conditions. Initiate GD fate on sand and grass. Select and characterize thickened agent formulations. Refine model structure to incorporate concrete matrix substrate parameters and initiate prediction analysis for field validation studies for FX. Initiate validation and extend laboratory studies using field protocols.</li> <li>• 1200 Chemical and Biological Warfare Effects on Operations (DTO-CB43) - Initiate development and testing of Sea Port of Debarkation (SPOD) model.</li> <li>• 2100 Oxidative Decontamination Formulation (DTO-CB44) - Conduct decontamination efficacy testing against an expanded test bed of agents. Continue material compatibility testing. Optimize formulations using a peracid approach.</li> <li>• 1500 Self-Detoxifying Materials for CB Protective Clothing (DTO-CB45) - Optimize N-halamine fabric treatment and characterize for detoxifying biological and chemical agents. Initiate electrospinning scale-up and identify membrane processing methodology. Characterize the candidate films and fibers fabricated using reactive nanoparticles.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2000 Collective Protection, Filtration - Fabricate and test candidate nano-material adsorbents for single pass filter concepts.</li> <li>• 1500 Collective Protection, Shelters - Continue development and testing of technologies leading to self-decontaminating soft wall shelters. Continue conventional weapons effects (CWE) study of shelter components and develop predictive model. Develop CWE mitigation improvements and field test to validate predictive model and new designs.</li> <li>• 1500 Sensitive Equipment, Decontamination - Demonstrate decontamination technology solutions for JSSD Block II and III using thermal and plasma technology and spot cleaning methodology using reactive solid suspensions.</li> <li>• 3500 Solution Chemistry, Decontamination - Optimize formulations for chemical and biological decontamination systems. Initiate material compatibility testing and efficacy testing on an expanded agent test bed for promising approaches.</li> <li>• 900 Solid Phase Chemistry, Decontamination - Develop and demonstrate novel solid and sorbent decontamination technology using nanoscale metal oxides and zeolites.</li> <li>• 2150 Individual Protection, Clothing - Complete evaluation of fielded and developmental protective garment materials to determine their effectiveness against selected TICs and particulate aerosols. Develop and produce a first generation membrane that has optimized permselectivity through ion implantation. Modify the best permselective membrane candidate materials to optimize their moisture vapor transport properties and evaluate those materials.</li> <li>• 2000 CB Battle Management, Information Systems Technology (IST) - Expand studies to address data fusion approaches for multiple sensors. Assess value added at system-level (multiple networked CB sensors and non-CB sensors) through modeling and demonstration. Initiate examination of methods to improve real-time, network-aided decision making, and visualization of network responses.</li> </ul>		
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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 3000 CB Environment, IST - Improve next-generation model (MESO) to include wet bio modifications, improved accuracy over rough terrain, and further improvements to boundary layer physics. Evaluate performance of computational fluid dynamics model (CBW-CFX) on ships and fixed land structures and identify areas for improvement. Demonstrate performance of coupled weather CBW dispersion model. Evaluate performance of hazard evolution codes updated by agent environmental effects data.</li> <li>• 1403 CB Planning, Training, Analysis, IST - Demonstrate HLA or DIS application of hazard models. Conduct statistical analysis of results of agent toxicity load variation in several hazard prediction models for fixed site application.</li> <li>• 1000 Simulation Based Acquisition, IST - Initiate testing of prototyping models against highest priority CBD objects. Develop and demonstrate a breadboard virtual prototype system.</li> <li>• 3700 Biological Identification - Complete development of Force Discrimination Assay (FDA). Continue development and testing automation of chip-based phylogenetic analysis of biological materials. Complete feasibility study to determine technological issues associated with microwave spectroscopy of biological materials under ambient conditions. Integrate concepts in protein separation and concentration technology to increase sensitivity and reduce interference from background materials into electrospray ionization mass spectroscopy. Continue development of database and validation methodology for multiple gene target reagents for biological agents. Laboratory demonstrate quantum dot technology for application to enhance antibody ticket technology for improved stability and sensitivity. Downselect and laboratory demonstrate combinatorial peptides as biological recognition elements as candidate replacements against traditional reagents. Continue the standardization of biological simulant materials for test and evaluation efforts.</li> </ul>		
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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 4800 Integrated CB Point Detection - Continue exploration of new concepts for small, combined chemical and biological identifiers. Expand feasibility studies of "low consumable or reagentless" concepts. Develop and test the improved Py-GC-IMS concept for chemical and biological discrimination. Downselect techniques and initiate breadboard design for chemical and biological aerosol sample processing.</li> <li>• 4000 Biological Standoff - Downselect among candidate bio standoff technologies identified in FY02. Pursue investigation of most promising approaches.</li> <li>• 2200 Chemical Standoff - Improve the sensitivity of the Chemical Imaging Sensor with integration of high sensitivity passive infrared technology. Provide the next generation of passive detection system with 10-100 fold improvement in sensitivity in comparison to current developmental systems.</li> <li>• 3000 Aerosol Technology - Continue to measure quantitative performance of candidate aerosol collectors for advanced point biological and chemical detection technology, and operating at the Joint Service low temperature requirements (-28 degrees F). Fabricate and test the first brassboards of a new generation of aerosol concentrations and collectors using mini-machining technology to reduce the size, power consumption, and weight of aerosol components in order to meet the stringent requirements for advanced detection systems. Fabricate and test the first brassboards of advanced aerosol inlets to meet Joint Service requirements for high collections efficiency over the respirable particle size range and for wind speeds up to 60 mph. Continue to provide controlled biosimulant aerosol challenges and begin providing chemical agent simulant aerosol challenges for Joint Service, DARPA, and DOE experimental equipment in preparation for the JFT.</li> </ul>		
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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>4000 Threat Agents - Complete the assessment of long-term needs in threat agent data and needs for improved simulants in CB defense materiel development, and participate in a collaborative inter-agency laboratory program to fill the data gaps and improve simulants. Continue to synthesize, toxicologically screen, and characterize identified new threat materials and to fill identified data gaps for established threats, including persistence properties of novel agents. Continue selection and validation of improved simulants for threat CB materials.</li> <li>5000 Low Level Chemical Agent Operational Toxicology Studies - Complete non-rodent GB inhalation studies to characterize Ct relationships for low level, longer duration exposures. Complete methodology development for third generation agent (VX) inhalation exposures and initiate VX studies in rats. Continue dose-metric methodology efforts to understand internal dosage following exposures. Develop methods for physiological modeling to understand the impact of route of exposure on toxicological effects from low level concentration and extended duration exposures to nerve agents.</li> <li>3750 Fourth Generation Agents (FGA) - Optimize materials and material treatment solutions for overgarments evaluated in FY02 to improve protection against aerosol particulates. Complete investigation of impact of modifications on initial set of point detectors. Complete collection of IR spectral data and model performance of IR sensors against FGAs.</li> <li>3000 Detection of Contaminants on Surfaces - Downselect the most mature technology. Design and build a breadboard system to demonstrate the technology to detect the presence of CBW contaminants (including FGAs) on surfaces.</li> <li>900 End-of-Service-Life-Indicators (ESLI) for Filters (DTO CB.36) - Incorporate best candidate technologies into viable mask filter prototypes. ESLI prototypes will be evaluated with modified military or commercial mask filters using a variety of representative containment challenges to enhance design and determine optimum location of ESLI.</li> </ul> <p><b>Total</b>        68817</p>		
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<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
CB3 CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	15935	21553	27248	33964	33721	26599	31800	Cont	Cont
CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)	9944	12492	11738	5327	5368	4697	4242	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project CB2</span> <span>Page 29 of 52 Pages</span> <span>Exhibit R-2 (PE 0602384BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>				PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>				PROJECT <b>HS2</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
HS2      HOMELAND SECURITY (APPLIED RESEARCH)	0	0	137000	0	0	0	0	0	137000

**A. Mission Description and Budget Item Justification:**

**Project HS2 HOMELAND SECURITY (APPLIED RESEARCH):** The intent of the Biological Defense Homeland Security Support program, as envisioned by the Office of Homeland Security, is to provide an integrated Homeland Security capability to detect, mitigate, and respond to biological-related incidents. This capability will be achieved primarily through the integration of enhanced biological detection capabilities and the fusion of medical surveillance systems, wide-area environmental sensors, access control point monitors, and information management systems that will reduce the vulnerability of U.S. assets or will impact national interests. The prototype-fielded systems will be integrated and demonstrated in DOD installations and urban areas and will include medical surveillance and access point integration technologies, biological and meteorological sensors, mobile biological analytical instruments, and enhanced integrated biological information network integrated into upgraded command control communications network. This project provides for investigative efforts to perform a Homeland Security requirements process and shape the development of selected technologies for environmental monitoring, medical surveillance, and data mining/fusion/analysis. Funding for this project also supports applied microbial threat assessment research and establishment of a panel of nationally recognized experts to assist in development of the research program, strategic plan, investment strategy, and policy for the Biological Counterterrorism Research Program.

**FY 2001 Accomplishments: None**

**FY 2002 Planned Program: No planned program**

Project HS2
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>HS2</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 55000 Applied Microbial Threat Assessment Research - Staff program office with appropriate programmatic and technical personnel, utilizing contractors, IPAs, and military/civilian government employees as appropriate. Develop program policy, strategic program plan, and short, mid and long-term investment strategy. The program office, with support of the senior advisory panel and interagency coordination group, will identify a first tier of research topics, solicit extramural research to support the program, and award research contracts and grants to support the identified program goals.</li> <li>• 5400 Signature Analysis - Investigate and demonstrate signature data base concept incorporating threat genomic profiles, environmental test bed (surrounding community) analysis profiles, and normality recognition/characterization base.</li> <li>• 4000 Signature Analysis - Conduct baseline studies to characterize background at two DoD bases for the initial test beds and urban areas.</li> <li>• 4900 Signature Analysis - Conduct initial baseline studies and analysis and data gathering for regional, state, and national demonstration.</li> <li>• 7900 Medical Surveillance - Conduct applied research on technologies to provide point-of-care diagnostic capabilities in DoD installations and civilian hospitals and clinics. The focus of the investigative efforts will be DNA micro array diagnostics, advance multiplex polymerase chain reaction (PCR) based detection concepts, protein chips, and host response genetic fingerprinting.</li> <li>• 7000 Medical Surveillance - Conduct applied research on medical surveillance technologies needed to adapt systems for the specific environments of the test beds.</li> </ul>		
Project HS2	Page 31 of 52 Pages	Exhibit R-2 (PE 0602384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>HS2</b>
<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 3700 Medical Surveillance - Conduct applied research on patient syndromic reporting technologies to identify and track the proliferation of diseases through military and civilian populations.</li> <li>• 3200 Medical Surveillance - Conduct applied research on technologies to integrate data from military and civilian hospital and pharmaceutical databases in a data reporting and recording environment.</li> <li>• 6400 Environmental Monitoring - Conduct studies on adapting advanced networked point-detection technologies and algorithms for use in layered applications to protect wide areas and structures.</li> <li>• 6200 Environmental Monitoring - Conduct applied research on advanced laser induced fluorescence technologies and algorithms to enable stand-off detection of bioagents over wide urban areas.</li> <li>• 4200 Environmental Monitoring - Conduct studies on mobile/transportable detection systems for surveillance and monitoring of incident sites while preserving evidence for later forensic analysis.</li> <li>• 7300 Access Control Point Monitoring - Conduct applied research to adapt stand-off technologies and algorithms to specific access control point applications for test beds.</li> <li>• 1600 Access Control Point Monitoring - Conduct studies to adapt advanced video surveillance applications to complement biodetectors for the test bed systems.</li> <li>• 4000 Access Control Point Monitoring - Conduct applied research on advanced non-destructive detection technologies for application in confined areas (e.g., ports-of-entry, special events) to increase their specificity and sensitivity to identified biological pathogens.</li> <li>• 3600 Data Mining, Fusion, and Analysis - Modeling and Analysis - Investigate existing plume dispersion models for biodefense in military and urban applications.</li> </ul>		
Project HS2	Page 32 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>HS2</b>
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 3600 Data Mining, Fusion, and Analysis - System Development - Conduct studies of advanced data collection, storage, analysis, and decision support technologies for test bed applications.</li> <li>• 2000 Data Mining, Fusion, and Analysis - Related Databases - Conduct studies to identify relevant databases and data elements (pharmaceutical databases, veterinary databases) and establish data mining algorithms to extract information to support biodefense objectives.</li> <li>• 1000 Requirements Analysis, System Integration and Program Support - Baseline Self Assessment (BSA) - Conduct research expanding existing BSA capabilities for vulnerability identification and analysis for urban areas.</li> <li>• 3000 Requirements Analysis, System Integration and Program Support - Mission Area Assessments - Conduct a mission area assessment to support biological defense for homeland security.</li> <li>• 3000 Requirements Analysis, System Integration and Program Support - Requirements Analysis and Process Development - Conduct a study to identify system-level and subsystem-level requirements for biological defense test beds based on tasks identified in mission area assessments.</li> </ul>		
<b>Total</b>	137000	
<div> <div>Project HS2</div> <div>Page 33 of 52 Pages</div> <div>Exhibit R-2 (PE 0602384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>				PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>				PROJECT <b>HS2</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
HS3 HOMELAND SECURITY (ADV TECH DEV)	0	0	162000	0	0	0	0	0	162000
HS4 HOMELAND SECURITY (DEMVAL)	0	0	55000	0	0	0	0	0	55000
HS6 HOMELAND SECURITY (MANAGEMENT SUPPORT)	0	0	6000	0	0	0	0	0	6000
HS9000 HOMELAND SECURITY PRODUCTION	0	0	30000	0	0	0	0	0	30000
<div style="display: flex; justify-content: space-between;"> <span>Project HS2</span> <span>Page 34 of 52 Pages</span> <span>Exhibit R-2 (PE 0602384BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>				PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>				PROJECT <b>TB2</b>				
COST (In Thousands)				FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TB2	MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)			22428	36513	38386	24085	25097	17826	18148	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project TB2 MEDICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH):** This project funds applied research on the development of vaccines, therapeutic drugs, and diagnostic capabilities to provide an effective medical defense against validated biological threat agents including bacteria, toxins, and viruses. Innovative biotechnological approaches and advances will be incorporated to obtain medical systems designed to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents. Categories for this project include Defense Technology Objectives (DTO); science and technology programs in medical biological defense (diagnostic technology, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines); and directed research efforts (medical countermeasures, genetically engineered threat countermeasures, and vaccines).

**FY 2001 Accomplishments:**

- 600 Common Diagnostic Systems (DTO) - Established preclinical models to evaluate rapid nucleic acid analysis options that enhance the recognition of infections caused by a broad range of biological threat agents. Prepared and optimized new molecular diagnostic reagents, controls, and protocols compatible with emerging portable nucleic acid analysis systems for identifying biological threat agents prior to conducting comprehensive evaluation trials.

Project TB2
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 400 Medical Countermeasures for Brucella (DTO) - Continued to develop and qualify in vitro systems in mice and higher animal species to reliably quantitate the intensity of potentially protective immune responses and determine the immune system components that eliminate infection with candidate live vaccines. Determined the stability of live, attenuated vaccine strain over time, using the mouse model. Developed additional live vaccine candidates with multiple attenuating mutations.</li> <li>• 700 Medical Countermeasures for Encephalitis Viruses (DTO) - Developed higher animal species models of Venezuelan equine encephalitis (VEE) virus type 1E and initiated development of a higher animal species model for VEE virus type 3A. Completed the development of vaccine candidates for VEE virus type 3A.</li> <li>• 500 Multiagent Vaccines for Biological Threat Agents (DTO) - Improved vaccine delivery platforms (naked DNA and VEE replicon systems) to optimize their efficiency for use as multiagent vaccines.</li> <li>• 573 Needle-less Delivery Methods for Recombinant Protein Vaccines (DTO) - Identified appropriate assays for toxin-specific recombinant protein antibodies/other indicators of immunity. Identified lead commercial or proprietary devices and formulations for vaccine delivery. Identified intradermal and respiratory routes having the most potential for success for needle-less vaccine delivery.</li> <li>• 160 Recombinant Plague Vaccine Candidate (DTO) - Developed assays and reagents for determining correlates for immunity for the recombinant plague vaccine candidate. Performed additional experiments supporting use of the anti-F1 competitive ELISA as an in vitro correlate to protection. Demonstrated proof-of-concept for mouse passive transfer as a surrogate marker of protection and for microphage cytotoxicity inhibition assay as a potential new in vitro correlate to protection.</li> </ul>		
Project TB2	Page 36 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 500 Recombinant Protective Antigen (rPA) Anthrax Vaccine Candidate (DTO) - Optimized purification methodology to minimize the number of isoforms in purified preparations of rPA, separated the isoforms and determined their biological activities. Initiated a study to evaluate isoform immunogenicity and ability to protect against anthrax infection in the rabbit model. Initiated a study in the rabbit model to determine the requirement for formaldehyde to stabilize formulated rPA vaccine preparations. Initiated studies to develop a mouse potency assay and determine in vitro correlate of immunity for the rPA vaccine candidate. Developed antibodies in the rabbit against rPA to support continuing passive immunity studies.</li> <li>• 2696 Diagnostic Technologies - Prepared new diagnostic reagents and devices compatible with emerging immunological platforms and rapid nucleic acid analysis systems for enhanced recognition of infections with validated biological threats. Evaluated medical diagnostic technologies and specimen-processing methods compatible with a comprehensive integrated medical diagnostic system for the rapid recognition of infections by validated biological threats (bacteria, viruses, and toxins) of military interest. Identified field sites for the comprehensive validation of rapid diagnostic methods that will provide performance data prior to transitioning to advanced development.</li> <li>• 557 Therapeutics, Bacterial - Optimized animal models for therapeutic indices. Evaluated in vivo activity of selected antimicrobials in established in vitro biochemical assays. Evaluated next generation antibiotics for therapeutic efficacy against bacterial threat agents. Designed an animal model for in vivo evaluation of selected compounds to protect against parenteral and aerosol infection by glanders and anthrax bacteria. Performed in vivo studies to evaluate therapeutic compounds against glanders.</li> </ul>		
Project TB2	Page 37 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 5066 Therapeutics, Toxin - Standardized assays for high-throughput screening of small molecule inhibitors of botulinum and staphylococcal enterotoxin B (SEB) toxin ligand-receptor interaction. Developed a cell-free enzymatic assay for ricin toxicity and screening inhibitors and developed a quantitative ricin neutralization assay to evaluate immune response in humans following vaccination. Solved three dimensional structure of the bound and unbound serotype B botulinum neurotoxin (BoNT) by x-ray crystallography to better characterize the active site for inhibitor development. Established a transgenic mouse colony and showed that lymphocytes from the mice react similarly to human lymphocytes to various biological warfare agents. Generated panels of monoclonal antibodies that neutralize BoNT serotype A and SE serotypes A, B, C1, and D.</li> <li>• 3729 Therapeutics, Viral - Developed a rabbitpox-rabbit animal model for analysis and characterization of candidate antiviral compounds for therapeutic activity. Investigated mechanisms of Ebola and Marburg virus (MBGV) pathogenesis in higher animal species models to define likely targets in agent pathogenesis and identify potential mediators of shock.</li> <li>• 5047 Vaccines, Bacterial - Evaluated previously identified virulence factors as vaccine candidates for Y. pestis. Optimized the animal model for aerosol exposure to B. mallei (glanders) for use in assessing vaccine candidates. Continued research on existing surrogate markers of protection against plague, identified additional markers, and demonstrated surrogate efficacy in the mouse model against aerosol plague infection by passive transfer of F1 capsular and V antigen antibody. Identified surrogate markers for anthrax and demonstrated surrogate efficacy in the rabbit model against parenteral anthrax infection by passive transfer of rPA antibody. Obtained plasmids to carry foreign genes for constructing vaccine strains in avirulent rough mutants of Brucella in order to evaluate Brucella as a possible multiagent vaccine platform.</li> </ul>		
Project TB2	Page 38 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>1166 Vaccines, Toxin - Utilized fermentation process development and scale-up support services and the Pichia yeast expression system to obtain recombinant vaccine candidates for botulinum toxin serotypes D and G and initiated efficacy studies in animals.</li> <li>734 Vaccines, Viral - Explored the addition of cytokine gene co-delivery with Ebola viral genes to achieve protective immunity. Determined additional components required in a vaccine that will protect against the most divergent isolates of MBGV.</li> </ul>		
<b>Total</b>	22428	
<div>Project TB2</div> <div>Page 39 of 52 Pages</div> <div>Exhibit R-2 (PE 0602384BP)</div>		



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 600 Common Diagnostic Systems (DTO) - Complete system integration and verification of approaches, reagents, and protocols for portable devices capable of detecting and identifying nucleic acids from a broad range of biological threat agents in clinical specimens.</li> <li>• 350 Medical Countermeasures for Brucella (DTO) - Test most efficacious vaccine candidate against Brucella abortus (B. abortus) and B. suis in the mouse lung infection model. Test efficacy against B. melitensis of additional live vaccine candidates in the mouse lung infection model. Continue to develop and validate in vitro systems in mice and higher animal species to reliably quantify the intensity of potentially protective immune responses and determine the immune system components that eliminate infection with candidate vaccines.</li> <li>• 200 Medical Countermeasures for Encephalitis Viruses (DTO) - Complete development of higher animal species models for Venezuelan equine encephalitis (VEE) virus type 3A. Redirect eastern equine encephalitis (EEE) and western equine encephalitis (WEE) virus vaccine development back to discovery and focus DTO on a multivalent VEE vaccine candidate.</li> <li>• 300 Multiagent Vaccines for Biological Threat Agents (DTO) - Complete final improvements to the vaccine delivery platforms for their use as multiagent vaccines.</li> <li>• 593 Needle-less Delivery Methods for Recombinant Protein Vaccines (DTO) - Evaluate formulations for intranasal, inhalation and transdermal application of recombinant proteins intended for use as vaccines. Evaluate available devices for delivery of vaccine using animal models. Develop and standardize assays to quantitate immune status.</li> <li>• 230 Recombinant Plague Vaccine Candidate (DTO) - Complete determination of the range of protection of the recombinant plague vaccine candidate against other virulent strains of Y. pestis in animals.</li> </ul>		
Project TB2	Page 40 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 500 Recombinant Protective Antigen (rPA) Anthrax Vaccine Candidate (DTO) - Complete evaluation of isoform immunogenicity and ability to protect against anthrax infection in the rabbit model. Complete the determination of formaldehyde requirement for stable rPA vaccine preparations. Complete the development of the mouse potency assay and the determination of the in vitro correlate of immunity for the rPA vaccine candidate. Investigate enhancement of the rPA vaccine candidate with immunostimulatory compounds. Develop antibodies to rPA in higher animal species to support continuing passive immunity studies.</li> <li>• 5085 Diagnostic Technologies - Continue preparation of diagnostic reagents that will enhance the depth and diversity of current approaches for the rapid recognition of infection by potential biological threat agents. Evaluate preclinical models and standards for evaluating medical diagnostic systems prior to transition to the regulatory compliant medical laboratory.</li> <li>• 1798 Therapeutics, Bacterial - Optimize and correlate in vitro assays with animal models for selected antibiotic and other therapeutics for bacterial threat agents and examine effects of selected therapies on multiple agent exposures in an animal model. Study the effect of immunomodulators on the host response to B. mallei and Y. pestis candidate vaccines and identify modulators that are effective in enhancing candidate vaccines.</li> <li>• 7757 Therapeutics, Toxin - Initiate structural stabilization and formulation studies on lead inhibitors of botulinum and SEB toxin activity. Refine in vivo and standardize in vitro screening models for botulinum toxin and SEB intoxication.</li> <li>• 3595 Therapeutics, Viral - Assess the potential for immunotherapy against Ebola virus in higher animal species models. Complete investigation of mechanisms of Ebola and Marburg virus (MBGV) pathogenesis in higher animal species models to characterize promising surrogate markers of efficacy for therapies.</li> </ul>		
Project TB2	Page 41 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>4395 Vaccines, Bacterial - Optimize in vitro correlate assays for candidate vaccines against various bacterial threat agents and evaluate the efficacy of additional novel component vaccine candidates (i.e., fusion proteins and antigen cocktails). Optimize formulation and dosage regime of selected vaccine candidates in animals. Determine whether plasmids expressing foreign genes in avirulent Brucella leads to suitable attenuation and immunogenicity in mice.</li> <li>1963 Vaccines, Toxin - Determine whether the recombinant fragment C vaccine candidates can elicit protective immunity in mice against neurotoxins produced by various strains of Clostridium botulinum.</li> <li>2530 Vaccines, Viral - Define the correlates of immunity (i.e., neutralizing antibody, cytotoxic T cells) that protect against disease from MBGV. Develop assays to measure surrogate markers to validate the efficacy of vaccine candidates in established model systems for MBGV. Develop higher animal species models for western equine encephalitis virus.</li> <li>1500 Medical Countermeasures - Enhance applied research efforts toward the development of broad-spectrum therapeutic countermeasures for exposure to broad classes of biological threats.</li> <li>3000 Genetically Engineered Threat Medical Countermeasures - Expand genetic and protein databases to identify and catalogue the various virulence factors, toxic motifs, and host regulatory proteins responsible for the pathologic effects of biological threat agents. Continue curating the genetic information database, evaluating mechanisms of pathophysiology associated with toxin threats, and developing critical proteomics capability.</li> <li>1500 Vaccines - Enhance applied research toward innovative approaches for the development and delivery of next generation and generation-after-next vaccines and strategies to enhance the immune response to broad classes of biological threats.</li> <li>617 SBIR - Small Business Innovative Research Efforts.</li> </ul>		
<b>Total</b>	36513	
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 350 Medical Countermeasures for Brucella (DTO) - Determine whether over-expression of vaccine antigens in candidate live vaccines increases protective efficacy. Continue to develop and validate in vitro systems in mice and higher animal species to reliably quantitate the intensity of potentially protective immune responses and determine the immune system components that eliminate infection complications following use of live attenuated candidate vaccines.</li> <li>• 200 Medical Countermeasures for Encephalitis Viruses (DTO) - Complete studies on VEE vaccine virus production, genetic stability, and transmission potential of candidate vaccines in competent vector mosquitoes.</li> <li>• 628 Needle-less Delivery Methods for Recombinant Protein Vaccines (DTO) - Downselect formulations for intranasal, inhalation and/or transdermal delivery of recombinant protein vaccine. Propose commercial or proprietary device for delivery of vaccines.</li> <li>• 7414 Diagnostic Technologies - Evaluate overlapping diagnostic technologies that can be integrated into a single comprehensive platform capable of detecting and identifying a broad range of biological threat agents in clinical specimens. Design and evaluate new medical diagnostic technologies and specimen-processing methods for the enhanced recognition of infections by potential biological threat agents by field medical laboratories. Continue to evaluate diagnostic technologies by using animal models. Develop field sites for evaluating new diagnostic technologies.</li> <li>• 1793 Therapeutics, Bacterial - Evaluate novel antibiotics and other therapeutics in established in vitro assays and animal models. Establish a database of therapeutic profiles for various strains of bacterial threat agents.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TB2</b>
<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 8757 Therapeutics, Toxin - Evaluate the outcome of structural stabilization studies on lead inhibitors of botulinum and SE. Standardize in vivo concept model systems for assessment of therapeutic efficacy and surrogate endpoints of human clinical efficacy.</li> <li>• 3758 Therapeutics, Viral - Continue assessing the potential for immunotherapy against Ebola virus in higher animal species models. Identify pharmacological compounds provided by industry that disrupt filovirus polymerases. Assess therapeutic action of compounds in mouse and higher animal models of filovirus infection.</li> <li>• 5069 Vaccines, Bacterial - Develop mutants in various agents for in vivo expressed genes to examine role in virulence. Characterize the mechanism(s) of vaccine resistance in selected strains of various agents. Determine mechanisms and correlates of protection with efficacious Burkholderia mallei vaccines.</li> <li>• 1082 Vaccines, Toxin - Standardize in vivo and in vitro concept model systems for assessment of vaccine efficacy and surrogate endpoints of human clinical efficacy.</li> <li>• 3585 Vaccines, Viral - Define the correlates of immunity that protect against disease from Ebola virus. Develop assays to measure surrogate markers to validate the efficacy of vaccine candidates in established model systems for Ebola virus. Develop higher animal species models for eastern equine encephalitis virus.</li> <li>• 1438 Medical Countermeasures - Accelerate research to define criteria for successful therapeutics against toxins and viruses to obtain diverse compounds such as inhibitors, channel-blockers, natural product extracts, and peptides that show promise as potential therapeutics against botulinum neurotoxins, staphylococcal enterotoxin, ricin toxin, and viruses. Continue characterizing and refining the variola non-human primate model for human smallpox for use in determining the effectiveness of post-exposure therapies.</li> </ul>		
Project TB2	Page 44 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>				PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>				PROJECT <b>TB2</b>				
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 2875 Genetically Engineered Threat Medical Countermeasures - Accelerate research efforts directed toward compiling and prioritizing function-related structural elements that constitute known toxins and virulence factors of biological threat agents. Continue developing integrated databases of protein domains or three-dimensional structural elements identified as virulence factors in biological threat organisms.</li> <li>• 1437 Vaccines - Evaluate additional vaccine candidates for delivery using the multiagent delivery platform. Develop virus constructs and obtain commercially produced humanized mouse monoclonal antibodies to evaluate protective immune responses. Investigate the potential of live vaccine candidates for bacterial threat agents.</li> </ul> <p><b>Total</b>      38386</p>												
<b>B. <u>Other Program Funding Summary:</u></b>				<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
TB3 MEDICAL BIOLOGICAL DEFENSE (ADV TECH DEV)				22394	29919	34200	50789	45560	40585	40675	Cont	Cont
Project TB2				Page 45 of 52 Pages				Exhibit R-2 (PE 0602384BP)				

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>				PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>				PROJECT <b>TC2</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TC2      MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH)	13819	18486	17974	17150	16569	18421	18572	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project TC2 MEDICAL CHEMICAL DEFENSE (APPLIED RESEARCH):** This project funds medical chemical defense applied research and emphasizes the prevention of chemical casualties through application of pharmaceuticals for prevention and treatment of the toxic effects of nerve, blister, respiratory, and blood agents. This project supports applied research of prophylaxes, pretreatments, antidotes, skin decontaminants, and therapeutic compounds that will counteract the lethal, physical, and behavioral toxicities of chemical agents. It also supports development of medical chemical defense materiel that ensures adequate patient care, field resuscitation, and patient management procedures. Categories for this project include Defense Technology Objectives (DTOs), science and technology program areas (Pretreatments, Therapeutics, and Diagnostics), and directed research efforts (Low Level Chemical Warfare Agent Exposure and Fourth Generation Agents).

Project TC2
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Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1200 Chemical Agent Prophylaxis II (DTO) - Tested best candidates of butyrylcholinesterase scavengers using appropriate model systems. Expanded physiologically based pharmacokinetic (PK) models for use in PK studies of candidate scavengers with/without agent present in a variety of species to include efficacy estimates in humans. Explored approaches for evaluating the human safety of human protein scavengers.</li> <li>• 4000 Medical Countermeasures for Vesicant Agents II (DTO) - Defined in vitro/in vivo models that can be extrapolated to humans for safety and efficacy studies. Investigated routes of administration for candidate vesicant exposure therapies. Began physicochemical data acquisition for vesicant therapy candidates. Determined in vivo efficacy of candidate vesicant therapies for prevention of mustard-induced pathology.</li> <li>• 576 Diagnostics - Evaluated commercial off-the-shelf products for potential use as diagnostics for nerve, vesicant, blood, or respiratory agent exposure.</li> <li>• 2657 Pretreatments - Extended molecular modeling and site-directed mutagenesis research to development of next generation nerve agent bioscavengers. Investigated oxime reactivation of inhibited acetylcholinesterase enzymes at specific protein sites. Identified source of human butyrylcholinesterase (HBuChE) from outdated human blood products and initiated purification process.</li> <li>• 3386 Therapeutics - Optimized formulations of scavenger enzymes in sponges, towelettes, and surgical pads for use in wound decontamination. Began efforts to acquire human butyrylcholinesterase enzyme in bulk. Screened midazolam plus candidate anticholinergic compounds for improvement in reducing/eliminating nerve agent-induced seizures.</li> </ul>		
Project TC2	Page 47 of 52 Pages	Exhibit R-2 (PE 0602384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>• 1000 Low Level Chemical Warfare Agent (CWA) Exposure - Initiated studies of pharmacological, physiological, and toxicological effects of exposure to low level CWAs. Investigated new sensitive biochemical and histological assay technologies for use in low level CWA exposures. Investigated potential biological markers that would indicate past exposure to low dose CWAs.</li> <li>• 1000 Fourth Generation Agents (FGAs) - Assessed the efficacy of currently fielded classical nerve agent countermeasures or nerve agent countermeasures in advanced or exploratory development against FGAs.</li> </ul>		
<b>Total</b>	13819	
<div>Project TC2</div> <div>Page 48 of 52 Pages</div> <div>Exhibit R-2 (PE 0602384BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1000 Chemical Agent Prophylaxis II (DTO) - Determine, through discussions with the FDA, the type(s) of data required for submission with an investigational new drug application for a human recombinant catalytic protein. Identify sources of human butyrylcholinesterase (HBuChE) for purification. Prepare sufficient amounts of purified HBuChE to test efficacy in two animal models. Transition HBuChE out of technology base. Vector/gene testing for bioscavenger delivery is continued in the technology base program.</li> <li>• 3000 Medical Countermeasures for Vesicant Agents II (DTO) - Evaluate improved animal models for screening candidate combination therapies for mustard exposure. Define side effects, establish adversity levels, and collate available industrial documentation. In addition, evaluate potential treatments for mustard-induced pulmonary injury under controlled conditions.</li> <li>• 1381 Diagnostics - Modify cholinesterase testing assay technology to generate diagnostic information on large sample sizes.</li> <li>• 4740 Pretreatments - Continue development of potential transgenic/bioengineered for production of next generation nerve agent catalytic scavenger. Identify/develop animal models for tests of new scavenger candidate(s). Begin preliminary efficacy studies with catalytic scavengers of nerve agents. Characterize new scavengers. Renew identification of a cyanide pretreatment/treatment compound.</li> <li>• 2552 Therapeutics - Initiate studies based on external program review to include assessing candidate agents for efficacy in saving vulnerable neurons and improving neurobehavioral outcome in suitable animal models of soman-induced status epilepticus. Develop criteria for evaluating neuronal salvage after status epilepticus. Evaluate improved animal models for screening combinations of anticonvulsant candidate therapies. Determine the potentiative effect(s) of combinations of anticonvulsants. Identify and validate animal models. Determine the essential ingredients for a rinse solution to optimally treat mustard-induced ocular injury.</li> </ul>		
Project TC2	Page 49 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>1000 Low Level Chemical Warfare Agent (CWA) Exposure - Continue to study biological markers of low dose exposures and investigate selectivity of the markers for CWAs. Evaluate potential genetic and central nervous system perturbations following low level CWA exposures.</li> <li>4500 Fourth Generation Agents (FGAs) - Assess the efficacy and prioritize potential approaches for improving the effectiveness of newly proposed nerve agent countermeasures. Evaluate oxime effectiveness against FGAs. Evaluate newly identified anticonvulsants for improved survival after exposure to FGAs. Assess the effects of in vivo persistence of FGAs on current countermeasure efficacy. Confirm cardiac pathology seen after exposure to FGAs.</li> <li>313 SBIR - Small Business Innovative Research Efforts.</li> </ul>		
<b>Total</b>	18486	
<div> <div>Project TC2</div> <div>Page 50 of 52 Pages</div> <div>Exhibit R-2 (PE 0602384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>	PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>	PROJECT <b>TC2</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1000 Medical Countermeasures for Vesicant Agents II (DTO) - Identify therapeutic window for administering compounds to mitigate the effects of mustard exposure. Evaluate combination therapies for sulfur mustard exposure in animal models.</li> <li>• 2711 Diagnostics - Continue development of analytical methods to measure biological matrices (e.g., blood, urine, tissue) following CWA exposure. Develop confirmatory forensic diagnostic capabilities and rapid screening technology for field applications.</li> <li>• 5982 Pretreatments - Expand physiologically based pharmacokinetic models to include scavengers as a component in the presence and absence of chemical warfare agents. Utilize animal model(s) from which cyanide pretreatment/treatment data can be extrapolated to humans. Initiate studies to evaluate potential pretreatments for mustard exposure using animal models. Investigate effectiveness of butyrylcholinesterase to prevent toxicity from exposure to low levels of CWA.</li> <li>• 2781 Therapeutics - Evaluate new FDA-approved drugs for treatment of mustard-induced ocular injury. Optimize formulation for an ocular rinse that treats mustard-induced ocular injury.</li> <li>• 2000 Low Level Chemical Warfare Agent (CWA) Exposure - Continue to study/validate biological markers for low level CWA exposure in animal models. Investigate the effectiveness of selected pretreatment and treatment countermeasures for low level nerve agent exposure. Determine neurobehavioral deficits resulting from exposure to low levels of nerve agents. Investigate potential therapeutic use of HBuChE for low level nerve agent exposure.</li> </ul>		
Project TC2	Page 51 of 52 Pages	Exhibit R-2 (PE 0602384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA2 - Applied Research</b>				PE NUMBER AND TITLE <b>0602384BP CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</b>				PROJECT <b>TC2</b>	
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 3500 Fourth Generation Agents (FGAs) - Refine dosing regimen of newly proposed nerve agent countermeasures. Continue search for effective reactivators for acetylcholinesterase (AChE) inhibited by FGAs. Continue synthesis of oximes and other antidotes. Determine mechanism by which oximes bind and reactivate nerve agent-inhibited AChE by use of a library of mutant cholinesterases. Complete evaluation of cardiac pathology. Evaluate topical skin protectants against FGAs. Develop surrogate markers for alternative medical countermeasures in guinea pigs. Determine absorption, distribution, metabolism, and excretion of FGAs using in vivo animal models.</li> </ul>									
<b>Total</b> 17974									
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
TC3 MEDICAL CHEMICAL DEFENSE (ADV TECH DEV)	9968	11302	12156	13423	13773	12907	13011	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project TC2</span> <span>Page 52 of 52 Pages</span> <span>Exhibit R-2 (PE 0602384BP)</span> </div>									

## **BUDGET ACTIVITY 3**

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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA3 - Advanced Technology Development**

PE NUMBER AND TITLE

**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	58241	75266	249842	106003	100922	87288	92228	Continuing	Continuing
CB3 CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	15935	21553	27248	33964	33721	26599	31800	Continuing	Continuing
CM3 WMD - CIVIL SUPPORT TEAM (ADV TECH DEV)	0	0	2500	2500	2500	2500	2500	Continuing	Continuing
CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)	9944	12492	11738	5327	5368	4697	4242	Continuing	Continuing
HS3 HOMELAND SECURITY (ADV TECH DEV)	0	0	162000	0	0	0	0	0	162000
TB3 MEDICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	22394	29919	34200	50789	45560	40585	40675	Continuing	Continuing
TC3 MEDICAL CHEMICAL DEFENSE (ADV TECH DEV)	9968	11302	12156	13423	13773	12907	13011	Continuing	Continuing

UNCLASSIFIED



**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA3 - Advanced Technology Development**

## PE NUMBER AND TITLE

**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED  
DEVELOPMENT)**

**A. Mission Description and Budget Item Justification:** This program element demonstrates technologies that enhance the ability of U.S. forces to defend against, and survive chemical and biological (CB) warfare. This PE funds advanced technology development for Joint Service and Service-specific requirements in both medical and non-medical CB defense areas. The medical program aims to produce drugs, vaccines, and medical devices as countermeasures for CB threat agents. Specific areas of medical investigation include: prophylaxis, pretreatment, antidotes and therapeutics, personnel and patient decontamination, and medical management of casualties. In the non-medical area, the focus is on demonstrations of CB defense technologies, including biological detection, chemical detection, and decontamination. These demonstrations, conducted in an operational environment with active user and developer participation, integrate diverse technologies to improve DoD Chemical/Biological Warfare (CBW) defense and deterrence. These demonstrations are leveraged by the Counterproliferation Support Program and include remote Biological Detection. A Biological Defense Homeland Security Support Program is planned. The support program, as envisioned by the Office of Homeland Security, is to provide an integrated Homeland Security capability to detect, mitigate, and respond to biological-related incidents. Also research efforts are planned for evaluating technologies for Weapons of Mass Destruction Civil Support Teams (WMD CSTs). Work conducted under this PE transitions to and provides risk reduction for Demonstration/Validation (PE 0603884BP) and Engineering/Manufacturing Development (PE 0604384BP) activities. The work in this PE is consistent with the Joint Service NBC Defense Research, Development, and Acquisition (RDA) Plan. This PE also provides for the conduct of advanced technology development in the areas of real-time sensing, accelerated BW operational awareness, and the restoration of operations following a BW/CW attack. This program is dedicated to conducting proof-of-principle field demonstrations, and tests of system-specific technologies to meet specific military needs.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/****BA3 - Advanced Technology Development**

## PE NUMBER AND TITLE

**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)****B. Program Change Summary:**

		<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>
Previous President's Budget (FY 2002 PB)		59905	69249	84250
Appropriated Value		0	75749	0
Adjustments to Appropriated Value		0	0	0
a. Congressional General Reductions		-407	-483	0
b. SBIR/STTR		-1014	0	0
c. Omnibus or Other Above Threshold Reductions		0	0	0
d. Below Threshold Reprogramming		1900	0	0
e. Rescissions		-132	0	0
Adjustments to Budget Years Since FY 2002 PB		0	0	165592
Current Budget Submission (FY 2003 PB)		58241	75266	249842

**Change Summary Explanation:**

**Funding:** FY03 - Increase to the technology base to fund a Homeland Security Support effort identified in the new Project HS3 (+\$162,000K); increase to support advanced development for WMD Civil Support Teams in the new project CM3 (+\$2,500K); increase to the technology base to accelerate the investigation and development of CBD technologies (+\$1,500K); inflation adjustment to reflect current assumptions (-\$408K).

**Schedule:****Technical:****C. Other Program Funding Summary:** See section B in the R2A's

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA3 - Advanced Technology Development**

PE NUMBER AND TITLE

**0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED  
DEVELOPMENT)****D. Execution: (Organizations receiving 10% or more of execution year funding)**

Labs/Centers:

TB3 - U.S. Army Medical Research Institute of Infectious Diseases, Ft. Detrick, MD; CB3 - U.S. Army Soldier Biological and Chemical Command, APG-EA, MD; CB3 - U.S. Marine Corps, Quantico, VA.

Universities: None

FFRDCs: None

Contractors: None

Other: None

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>CB3</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CB3      CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	15935	21553	27248	33964	33721	26599	31800	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CB3 CHEMICAL BIOLOGICAL DEFENSE (ADV TECH DEV):** This project demonstrates technology advancements for Joint Service application in the areas of chemical and biological agent detection and identification, decontamination, and individual/collective protection which will speed maturing of advanced technologies to reduce risk in system-oriented demonstration and validation efforts. This project funds the Joint Service Warning and Identification LIDAR (Light Detection And Ranging) Detector (JSWILD) Program, (JSWILD is transitioning to ARTEMIS in CP4, in FY01 and CA4, in FY02 and beyond.) the Joint Service Sensitive Equipment Decontamination (JSSED) Program, the Joint Chemical/Biological Agent Water Monitor (JCBAWM), the Joint Biological Standoff Detection System (JBSDS), the Joint Service Wide Area Detector (JSWAD), and Joint Operational Effects Federation (JOEF). Additionally, this program funds the Small Unit Biological Detector (SUBD), Consequence Management Interoperability Service (CMIS), and the Chemical Biological Individual Sampler (CBIS). Also funded are research efforts in chemical biological detection technologies, advanced materiel research for filter materials, chemical and biological warfare effects on operations, and identification technologies to support the Joint Biological Point Detection System (JBPDS) Block II program.

A major effort is funded to conduct technologies transition from DOE and DARPA research to the CB defense programs.

Project CB3
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CB3</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 2142 Joint Service Warning and Identification LIDAR (Light Detection and Ranging) Detector (JSWILD) - Demonstrated brassboard system and transitioned technology to ARTEMIS (Active Standoff CW Detection System).</li> <li>• 2386 Joint Service Sensitive Equipment Decontamination (JSSED) - Conducted development of sensitive equipment/items decontamination technologies (Block I). Identified candidate technologies for interior decontamination (Block II/III).</li> <li>• 2191 Detection Technologies - Evaluated and supported accelerated efforts on technologies with significant potential for demonstration in various Advanced Concept Technology Demonstrations (ACTD) and upcoming mature development programs. Effort involved testing hyperspectral imaging systems and a representative RADAR system to provide cueing and early warning capabilities.</li> <li>• 2702 Chemical Biological Advanced Materials Research - Demonstrated the value of advanced material used in protection concepts for filtration, clothing, and tentage.</li> <li>• 742 Small Unit Biological Detection (SUBD) - Advanced the current component technologies to a final configuration and paid for contract closeout and archiving of data.</li> <li>• 3842 Consequence Management Interoperability Service (CMIS) - Initiated development of a "common operating view" that enables DoD to view tactical information in advance of arriving at the scene of a Weapons of Mass Destruction (WMD) incident. Tailored Commercial Off-The-Shelf (COTS) software that is adapted to the "lowest common denominator." Evaluated Geospatial Information System (GIS) data and applications for WMD incidents.</li> <li>• 1930 Chemical Biological Individual Sampler (CBIS) - Conducted testing and validation of COTS passive chemical samplers as well as developed the standard analytical method for these samplers. Conducted demonstrations that address critical operations issues.</li> </ul>		
<b>Total</b>	15935	
Project CB3 <span style="float: right;">Page 6 of 42 Pages</span> <span style="float: right;">Exhibit R-2 (PE 0603384BP)</span>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CB3</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2000 Joint Chemical Biological Agent Water Monitor (JCBAWM) (DTO-CB37) - Initiate planning for technology transition to mature development. Initiate design of brassboard system for demonstration. Incorporate surety testing of component technologies as a parameter in design of brassboard.</li> <li>• 1000 Chemical and Biological Warfare Effects on Operations (DTO-43) - Develop a general purpose model of the operations of large fixed-site facilities (air bases, Aerial Ports of Debarkation (APODs) and, Seaports of Debarkation (SPODs)), with the capability to represent chemical and biological warfare (CBW) attacks and their operational impacts.</li> <li>• 1700 Miniaturized C/B Detectors (MEMS Technology) - Initiate a program for fieldable sensors using MEMS technology.</li> <li>• 1300 Center for Bio Defense Statewide Medical Response System.</li> <li>• 500 Detection Technologies - Complete assessment of hyperspectral imaging technologies and establish transition points for the highest potential payoff capabilities.</li> <li>• 300 Joint Service Sensitive Equipment Decontamination (JSSED) - Complete analysis of alternatives.</li> <li>• 300 Fourth Generation Agent (FGA) Decontamination - Initiate investigation of efficacy of fielded and developmental decon solutions against FGAs.</li> <li>• 2088 Joint Effects Model (JEM) - Initiate analysis of alternatives and preparation of documentation to support transition to mature development. Initiate combination of candidate models to single model, and demonstrate.</li> </ul>		
Project CB3	Page 7 of 42 Pages	Exhibit R-2 (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CB3</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>10507 Technology Transition - Conduct acceptance testing of anthrax antibody mixtures under development for improved affinity. Implement improved sample treatment procedures for ultraviolet-infrared matrix-assisted laser desorption (MALDI) Time of Flight (TOF) mass spectrometer and prepare for field evaluation. Develop assays and initiate live agent testing of DARPA Micro Array of Gel-Immobilized Compounds (MAGIChip) nucleic acid identification technology for Bacillus species. Initiate automation of DARPA-developed MALDI mass spectrometry (MS). Initiate comparative evaluation for sensitivity and discrimination capability of UV-MALDI and V-IR MALDI MS candidates from DARPA and electrospray ionization (ESI) MS. Identify sample processing challenges for improvement. Evaluate suitability and identify engineering issues for militarization of DOE's microlab technology, Handheld Advanced Nucleic Acid Analyzer (HANAA), and decontamination foam system. Develop and test thermocatalytic air purifier technology for collective protection shelters, focus is on a DARPA technology in thin-foil high efficiency heat exchanger and system design. Expand the biological Joint Field Trial concept to a multi-tiered set of evaluation protocols to facilitate the characterization of candidate technology at varying levels of maturity.</li> <li>1493 Joint Operational Effects Federation (JOEF) - Conduct Analysis of Alternatives (AoA) and market survey. Establish Joint System Architecture IPT and Joint T&amp;E IPT. Coordinate and create the Test and Evaluation Master Plan (TEMP). Develop the acquisition strategy and supporting acquisition documentation. Demonstrate the maturity of the JOEF Blk I federate. Conduct Interoperability Assessment and a System Threat Assessment.</li> <li>365 SBIR - Small Business Innovative Research efforts.</li> </ul>		
<b>Total</b>	21553	
<div> <div>Project CB3</div> <div>Page 8 of 42 Pages</div> <div>Exhibit R-2 (PE 0603384BP)</div> </div>		

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BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CB3</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4550 Joint Chemical Biological Agent Water Monitor (JCBAWM) (DTO-CB37) - Complete planning for technology transition to mature development. Complete design and initiate build of brassboard system for demonstration.</li> <li>• 1493 Chemical and Biological Warfare Effects on Operations (DTO-43) - Complete and transition Joint Environmental Model to the Joint Warning and Reporting Network (JWARN). Complete and transition Simulation, Training and Analysis for Fixed Sites (STAFFS) to Joint Warfare System (JWARS) and to JOEF Block 1.</li> <li>• 3569 Biological Identification - Develop next generation broad-spectrum discrimination and automated ID technologies toward demonstration and transition to JBPDS Block II.</li> <li>• 2136 JSSED - Conduct targeted analysis of alternatives for Block II/III. Initiate documentation of technology findings to support transition to development.</li> </ul>		
Project CB3	Page 9 of 42 Pages	Exhibit R-2 (PE 0603384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CB3</b>
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li> 14000 Technology Transition - Continue development of sample treatment procedures for MALDI-TOF mass spectrometer and demonstrate in a field evaluation. Continue development of assays and live agent testing of DARPA Micro Array of Gel-Immobilized Compounds (MAGIChip) nucleic acid identification technology for Bacillus species. Continue automation of DARPA-developed ultraviolet-infrared matrix-assisted laser desorption (MALDI) mass spectrometry (MS). Continue comparative evaluation and improve sensitivity and discrimination capability of UV-MALDI and UV-IR MALDI MS candidates from DARPA and electrospray ionization (ESI) MS. Initiate the militarization of DOE's microlab technology, Handheld Advanced Nucleic Acid Analyzer (HANAA), and decontamination foam system. Continue development and testing of thermocatalytic air purifier technology for collective protection shelters, focus is on a DARPA technology in thin-foil high efficiency heat-exchanger and system design. Continue development and initiate implementation of expanded multi-tiered set of evaluation protocols to address all stages of chemical/biological defense materiel development from system concept development to mature technology/NDI/COTS systems to facilitate fair evaluation of technology candidates from all sources. </li> <li> 1500 Advanced Filtration - Demonstrate fiber-immobilized carbon particles from DARPA project in mask filter designs (Joint Service General Purpose Mask (JSGPM), the Joint Service Aviator Mask (JSAM)), collective protection designs (JTCOPS (Joint Transportable Collective Protection Shelter) and production filters (Joint Collective Protection Equipment)). </li> </ul>		
<b>Total</b>	27248	
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>CB3</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
BJ4 BIOLOGICAL DEFENSE (DEMVAL)	5765	1560	3661	19163	19329	0	0	0	49478
CA4 CONTAMINATION AVOIDANCE (DEMVAL)	8866	16274	16963	1988	2997	0	0	0	47088
CO4 COLLECTIVE PROTECTION (DEMVAL)	1454	0	4390	0	0	0	0	0	5844
CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)	9944	12492	11738	5327	5368	4697	4242	Cont	Cont
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	15709	15243	13423	20442	21137	24459	25516	Cont	Cont
DE4 DECONTAMINATION SYSTEMS (DEMVAL)	3368	6143	6972	12378	14220	3997	3992	Cont	Cont
IP4 INDIVIDUAL PROTECTION (DEMVAL)	16610	14317	0	0	0	0	0	0	30927
<div style="display: flex; justify-content: space-between;"> <span>Project CB3</span> <span>Page 11 of 42 Pages</span> <span>Exhibit R-2 (PE 0603384BP)</span> </div>									

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002					
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA3 - Advanced Technology Development				PE NUMBER AND TITLE 0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)					PROJECT CM3			
COST (In Thousands)				FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CM3	WMD - CIVIL SUPPORT TEAM (ADV TECH DEV)			0	0	2500	2500	2500	2500	2500	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CM3 WMD - CIVIL SUPPORT TEAM (ADV TECH DEV):** This project funds Pre-Systems Acquisition in support of Consequence Management teams around the Nation. National Guard Weapons of Mass Destruction Civil Support Teams (WMD CST) are being established in 32 States. These teams were created based upon the Defense Reform Initiative Directive #25 (DRID #25), Integrating National Guard and Reserve Component Support for Response to Attacks Using Weapons of Mass Destruction (WMD). The role of the Civil Support Teams (CSTs) were further codified in the National Security Strategy of October 1998, which builds upon the National Guard's ties to the communities throughout the nation, and its long-standing tradition of responding to national emergencies. The strategy allows the National Guard to provide forces and resources that the emergency manager requires to manage the potentially catastrophic effects of a WMD situation. The National Guard, as the lead organization for military support to local and state authorities, leverages its geographic dispersion across the nation to reduce response times, and allow for the majority of the country to be protected. As a result of Presidential and Secretary of Defense directives, the Department of Defense established the Weapons of Mass Destruction Civil Support Teams (WMD CST) to rapidly respond in support of a local incident commander to assess a suspected WMD incident scene, advise them of appropriate courses of action that will protect local populations from loss of life, injury, and significant property damage, and facilitate the development of their Requests For Assistance (RFAs) based on CST knowledge of available local, state and federal resources that can assist in the mitigation of a WMD emergency.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CM3</b>
<p>This program funds the purchase and testing of Commercial-off-the-shelf (COTS) components on the existing Table of Distribution and Allowances (TDA) of Weapons of Mass Destruction Civil Support Teams (WMD CST), and evaluates new commercial products being considered for the WMD CST TDA for performance and ability to meet requirements.</p> <p><b>FY 2001 Accomplishments: None</b></p> <p><b>FY 2002 Planned Program: No planned program</b></p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 600 WMD CST - Initiate purchase of Commercial-off-the-shelf components on the Table of Distribution &amp; Allowances (TDA) of the Weapons of Mass Destruction (WMD CSTs).</li> <li>• 1250 WMD CST - Initiate evaluation of new commercial products being considered for TDA to determine performance and ability to meet WMD CST requirements.</li> <li>• 650 WMD CST - Planning and support for test program for commercial equipment.</li> </ul> <p><b>Total</b>            2500</p>		
<p>Project CM3</p> <p>Page 13 of 42 Pages</p> <p>Exhibit R-2 (PE 0603384BP)</p>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>CM3</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
CA4 CONTAMINATION AVOIDANCE (DEMVAL)	8866	16274	16963	1988	2997	0	0	0	47088
CM5 WMD - CIVIL SUPPORT TEAM (EMD)	0	0	1000	1000	14500	400	0	0	16900
CM6 WMD - CIVIL SUPPORT TEAM (MANAGEMENT SUPPORT)	0	0	1600	1600	1600	1600	1600	Cont	Cont
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT	2046	0	18959	8000	3047	44300	1600	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project CM3</span> <span>Page 14 of 42 Pages</span> <span>Exhibit R-2 (PE 0603384BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>CP3</b>				
COST (In Thousands)				FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CP3	COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)			9944	12492	11738	5327	5368	4697	4242	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV):** The mission of the Counterproliferation Program (CP) is to address shortfalls in the Department of Defense (DoD) deployed capability to defend against and counter the proliferation of Weapons of Mass Destruction (WMD). By focusing on near term results, the CP accelerates delivery of new tools, equipment, and procedures to combat forces. Under the passive defense pillar, CP enhances the efforts of the Chemical and Biological Defense Program. This project funds a variety of programs to defend our forces against WMD, such as the Biological Detection (BIODET) and Counterproliferation Support (Non-system) (CTP (NS)) efforts, Critical Reagents Program (CRP), Restoration of Operations (RESTOPS) and Planning and Development (PD) for Advanced Concept Technology Demonstrations.

Project CP3
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CP3</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 974 ACTD-PD - Performed technology maturity evaluations for selection of technologies for Integrated Chemical Biological ACTD. Initiated maturation of Standoff Detector for use as a surface chemical detector.</li> <li>• 1757 BIODET - Produced nucleic acid primer libraries for testing and continued development of a biological detection capability using nucleic acids. Completed the transition to project CB3 for test, evaluation, and further assay development against live agents under tech transfer funds.</li> <li>• 386 CRP - Completed current phase of development of reagents (antibodies and antigens) that are critical to the development, testing, and support of CP biological detection systems.</li> <li>• 5708 CTP (NS) - Counterproliferation Non Systems (CTP (NS)) - Continued development and evaluation of generic detectors (Time of Flight (TOF) Mass Spectrometer and the (MS)/MS, Ultra Violet) with associated algorithms to provide increased warning time for tactical battlefield applications. Continued development, testing, and evaluation of automated sample preparation technology and protocols for Polymerase Chain Reaction (PCR) devices to improve identification specificity and sensitivity in future biological systems. Completed transition of TOF Mass Spectrometer to the CB3 program. Initiated synthetic environment tool for technology selection for RestOps scenarios. Initiated testing of warfare agents on RestOps scenario surfaces for use in modeling and simulation.</li> <li>• 1119 RESTOPS - Completed assessment of universal novel chemical and biological decontaminants for use in the RestOps ACTD and fixed site decontamination programs.</li> </ul>		
<b>Total</b>	9944	
<div>Project CP3</div> <div>Page 16 of 42 Pages</div> <div>Exhibit R-2 (PE 0603384BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>CP3</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>1885 ACTD-PD - Perform technology maturity evaluations, perform analysis of alternative technologies, and prepare acquisition strategy for Contamination Avoidance for Seaports of Debarkation (CASPOD) Advanced Concept Technology Demonstration.</li> <li>2487 CTP (NS) - Initiate development and testing of improved UV detectors, UV micro-lasers, and algorithms. Initiate prototype development and testing of an optical based detector using high affinity nucleic acid aptamer chips. Initiate challenges to detector systems in development using Red Teams. Initiate development and testing of a new improved collector/concentrator and pre-separator devices for filtering and cleaning environment air samples.</li> <li>3469 CTP (NS) - Continue development and evaluation of generic detectors (TOF MS/MS, UV) and associated algorithms to provide increased warning time for tactical battlefield applications. Continue development, testing, and evaluation of automated sample preparation technology and protocols for Polymerase Chain Reaction (PCR) devices to improve identification specificity and sensitivity in future biological systems.</li> <li>3000 BIO Non Sys - Develop decontaminants, equipment, procedures, techniques, and tactics for decontamination of wide body aircraft.</li> <li>1440 RESTOPS - Continue development of a synthetic environment tool for technology selection in RestOps scenarios. Continue testing of warfare agents on RestOps scenario surfaces for use in modeling and simulation. Continue development of maturing technologies for RestOps demonstrations.</li> <li>211 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	12492	
<div>Project CP3</div> <div>Page 17 of 42 Pages</div> <div>Exhibit R-2 (PE 0603384BP)</div>		



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>CP3</b>	
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 1892 ACTD-PD - Perform technology maturity evaluations for selection of technologies for future ACTD candidate.</li> <li>• 2376 BIO Non Sys - Initiate short term projects resulting from collaborative efforts with non-DoD agencies to accelerate promising technologies that can fill technology gaps in the Chemical and Biological Defense programs.</li> <li>• 3666 CTP (NS) - Continue development and demonstration of improved Hand Held Assay (HHA) device for fielded bio-detection systems, including legacy systems in an attempt to improve the three basic aspects of the HHA: reagents, format and solid phase. Initiate development of biological attribution technology to capture a suite of leading edge biotechnology techniques by which any sample of biological material could be analyzed to detect a specific signature that will lead to a determination of its origin.</li> <li>• 3804 RESTOPS - Complete synthetic environment tool for technology selection in RestOps scenarios. Complete testing of warfare agents on RestOps scenario surfaces for use in modeling and simulation. Complete development of maturing technologies for RestOps demonstrations.</li> </ul>									
<b>Total</b>		11738							
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	15709	15243	13423	20442	21137	24459	25516	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project CP3</span> <span>Page 18 of 42 Pages</span> <span>Exhibit R-2 (PE 0603384BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>HS3</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
HS3      HOMELAND SECURITY (ADV TECH DEV)	0	0	162000	0	0	0	0	0	162000

**A. Mission Description and Budget Item Justification:**

**Project HS3 HOMELAND SECURITY (ADV TECH DEV):** The intent of the Biological Defense Homeland Security Program, as envisioned by the Office of Homeland Security, is to provide an integrated Homeland Security capability to detect, mitigate, and respond to biological-related incidents. This capability will be achieved primarily through the integration of enhanced biological detection capabilities and the fusion of medical surveillance systems, wide-area environmental sensors, access control point monitors, and information management systems that will reduce the vulnerability of U.S. assets or will impact national interests. The prototype-fielded systems will be integrated and demonstrated as a pilot program in DoD bases and urban test beds. Test beds will include medical surveillance technology, biological and meteorological sensors, biological analytical instruments, and an integrated biological information network. Funding for this project also supports microbial forensic genomics, confirmatory analysis, and aerobiology testing for the Biological Counterterrorism Research Program.

**FY 2001 Accomplishments: None**

**FY 2002 Planned Program: No planned program**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>HS3</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 13000 Aerobiology Testing - Establish program capability for threat agent aerobiological research and model development, focusing on characterization of the properties of biological threat agents that are most significant for understanding the ramifications for medical and non-medical defensive measures.</li> <li>• 3400 Signature Analysis - Integrate into a test bed system the ability to identify, catalog, and analyze observable data from sensors and medical surveillance activities using signature source term catalogs to identify potential threat events.</li> <li>• 6900 Signature Analysis - Conduct detailed characterization through laboratory analysis of the background at two DoD bases and surrounding urban areas for the test beds.</li> <li>• 8100 Medical Surveillance - Integrate into a test bed and demonstrate technologies providing point-of-care diagnostic capabilities in DoD installations and civilian hospitals and clinics.</li> <li>• 2700 Medical Surveillance - Integrate technologies into a test bed to demonstrate patient syndromic reporting so that proliferation of diseases through military and civilian populations can be tracked.</li> <li>• 2200 Medical Surveillance - Demonstrate technologies to integrate data from military and civilian hospital and pharmaceutical databases to provide indicators of bioterrorism threat events.</li> <li>• 5900 Environmental Monitoring - Integrate into test beds existing networked point-detection technologies to demonstrate a capability to implement a layered architecture to protect wide areas and structures.</li> <li>• 5700 Environmental Monitoring - Integrate into test beds existing networked stand-off detection technologies and real time detection, warning, and reporting through multi-mission sensor integration and with other data sources to demonstrate a capability to implement a layered architecture to protect wide areas and structures.</li> </ul>		
Project HS3	Page 20 of 42 Pages	Exhibit R-2 (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>HS3</b>
<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2200 Environmental Monitoring - Integrate into test beds mobile/portable detection systems to demonstrate a capability for surveillance and monitoring of incident sites while preserving evidence for later forensic analysis.</li> <li>• 9300 Access Control Point Monitoring - Integrate into test beds existing access control point monitoring technologies to demonstrate a capability to implement a layered architecture to protect choke points and special events.</li> <li>• 1600 Access Control Point Monitoring - Integrate into test beds existing video surveillance technologies to demonstrate a capability to implement a layered architecture to protect choke points and special events.</li> <li>• 6000 Access Control Point Monitoring - Integrate into test beds existing non-destructive stand-off technologies to demonstrate a capability to implement a layered architecture to protect choke points and special events.</li> <li>• 4700 Data Mining, Fusion, and Analysis - Modeling and Analysis - Develop and integrate existing plume dispersion models into test bed data fusion and analysis subsystems to provide urban hazard prediction capability.</li> <li>• 5000 Data Mining, Fusion, and Analysis - System Development - Develop, integrate and demonstrate data collection, storage, analysis, and decision support capabilities to support test bed applications.</li> <li>• 2600 Data Mining, Fusion, and Analysis - Related Databases - Verify, validate and accredit relevant databases and data elements (pharmaceutical databases, veterinary databases) and integrate through the use of data mining algorithms to extract information to support biodefense objectives.</li> <li>• 4000 Data Mining, Fusion, and Analysis - CT Information Network - Implement the DTRA Chemical Biological Information Network pilot program and integrate it into the DTRA national reach-back network.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>HS3</b>
<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>6300 Data Mining, Fusion, and Analysis - Command, Control, and Communications - Integrate existing command, control, and communications systems and decision analysis tools to produce a test bed capability that ties together medical surveillance and environmental monitoring technologies to generate useful information for end users.</li> <li>1000 Testing and Trials - Command Post Exercises - Conduct small scale exercise to evaluate initial concept of operations.</li> <li>9900 Testing and Trials - Field Exercises - Conduct full field exercises for all test beds.</li> <li>4000 Testing and Trials - Red Team Analysis - Develop and implement adversarial analysis to identify gaps in the test bed system-of-system architecture and subsystems.</li> <li>8500 Requirements Analysis, System Integration and Program Support - Mission Infrastructure Protection - Identify information requirements of state, local, and national infrastructure managers to define functional requirements for decision support capabilities. Implement lessons learned from SMART building/2002 Olympics, NCR test bed, Hart Building decontamination, DARPA Immune Building, and other major projects into biodefense requirements process.</li> <li>1000 Requirements Analysis, System Integration and Program Support - Baseline Self Assessment (BSA) - Implement expanded BSA for vulnerability identification and analysis for urban areas.</li> <li>6000 Requirements Analysis, System Integration and Program Support - Test Bed Systems Engineering - Provide overarching systems engineering, design, and analysis of test bed systems to create a flexible architecture to accommodate evolving detection and surveillance capabilities.</li> <li>15000 Requirements Analysis, System Integration and Program Support - Test Bed Integration - Develop and implement integrated test bed systems based on systems engineering design activities.</li> </ul>		
Project HS3	Page 22 of 42 Pages	Exhibit R-2 (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>HS3</b>
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>5000 Requirements Analysis, System Integration and Program Support - Independent Verification &amp; Validation - Provide independent assessment of system level and subsystem level performance against identified functional requirements, including independent system, integration, and acceptance tests.</li> <li>2000 Requirements Analysis, System Integration and Program Support - Long Range Planning - Analyze lessons learned from test bed activities and engineer future test bed systems by revising standards and updating system architectures for a biological defense homeland security support program.</li> <li>10000 Microbial Forensic Genomics - Conduct developmental research on forensic genomics and threat agent identification. Conduct research to identify the necessary tools and biomarkers for accurate agent identification of new and emerging biological threats.</li> <li>10000 Forensic Biological Analysis - Support the continued development and refinement of a certified forensic biological threat agent analytical capability. Devise technical approaches to support large fluctuations in sample throughput.</li> </ul>		
<b>Total</b>	162000	
<div> <div>Project HS3</div> <div>Page 23 of 42 Pages</div> <div>Exhibit R-2 (PE 0603384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>HS3</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
HS4 HOMELAND SECURITY (DEMVAL)	0	0	55000	0	0	0	0	0	55000
HS6 HOMELAND SECURITY (MANAGEMENT SUPPORT)	0	0	6000	0	0	0	0	0	6000
HS9000 HOMELAND SECURITY PRODUCTION	0	0	30000	0	0	0	0	0	30000
<div style="display: flex; justify-content: space-between;"> <span>Project HS3</span> <span>Page 24 of 42 Pages</span> <span>Exhibit R-2 (PE 0603384BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>TB3</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TB3 MEDICAL BIOLOGICAL DEFENSE (ADV TECH DEV)	22394	29919	34200	50789	45560	40585	40675	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project TB3 MEDICAL BIOLOGICAL DEFENSE (ADV TECH DEV):** This project funds preclinical development of safe and effective prophylaxes and therapies (vaccines and drugs) for pre- and post-exposures to biological threat agents. This project also supports the advanced technology development of diagnostic devices to rapidly diagnose exposure to biological agents in clinical samples. A broad range of technologies involved in the targeting and delivery of prophylactic and therapeutic medical countermeasures and diagnostic systems is evaluated so that the most effective countermeasures are identified for transition to Advanced Development. Transitioning candidate vaccines, therapeutics, and diagnostic technologies to Advanced Development requires the development of scientific/regulatory technical data packages to support the Food and Drug Administration (FDA) Investigational New Drug (IND) process and DoD acquisition regulations. Categories for this project include Defense Technology Objectives (DTOs); science and technology program areas in medical biological defense (diagnostic technology, bacterial therapeutics, toxin therapeutics, viral therapeutics, bacterial vaccines, toxin vaccines, and viral vaccines), directed research efforts (Bioadhesion Research, Medical Chemical/Biological Counterterrorism Support, Medical Countermeasures, Advanced Diagnostics, and Vaccines); and efforts to transition promising medical biological defense technologies from the Defense Advanced Research Projects Agency (DARPA).

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Exhibit R-2 (PE 0603384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>TB3</b>
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1000 Common Diagnostic Systems (DTO) - Conducted laboratory-based and field-based evaluations of portable nucleic acid analysis systems that enhance the diagnostic capabilities of field medical laboratories. Evaluated competing technical options for their operational compatibility with the field medical laboratory and a highly regulated medical center clinical laboratory.</li> <li>• 1400 Medical Countermeasures for Brucella (DTO) - Determined the minimum immunogenic oral dose of the most promising live, attenuated vaccine candidate in higher animal species. Established fermentation conditions for growth of live, attenuated vaccine strain and prepared research master seed and research production seed stocks using processes defined to a level consistent with the intent of current Good Manufacturing Practices (cGMP).</li> <li>• 600 Medical Countermeasures for Encephalitis Viruses (DTO) - Tested vaccine candidates for Venezuelan equine encephalitis (VEE) virus type 1E and VEE virus type 3A for efficacy in rodent animal models. Tested the VEE virus type 1E candidates for safety and efficacy in the higher animal species model and defined surrogate markers of protection for validation as acceptable markers of vaccine efficacy.</li> <li>• 1500 Multiagent Vaccines for Biological Threat Agents (DTO) - Initiated testing of safety and efficacy in animals of products (individually and combined) intended for use in multiagent vaccines.</li> <li>• 914 Needle-less Delivery Methods for Recombinant Protein Vaccines (DTO) - Identified needle-less vaccine system components. Established protocols for studies in animals. Standardized animal models. Identified appropriate animal models for screening formulations.</li> </ul>		
Project TB3	Page 26 of 42 Pages	Exhibit R-2 (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>TB3</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>650 Recombinant Plague Vaccine Candidate (DTO) - Completed a technical data package to support transition of the plague vaccine candidate out of technology base. Completed a study in a higher animal species demonstrating capability of the vaccine to provide 30% protection from virulent aerosol challenge.</li> <li>750 Recombinant Protective Antigen (rPA) Anthrax Vaccine Candidate (DTO) - Performed comparative biochemical and biophysical characterization of rPA vaccine candidate and licensed anthrax vaccine adsorbed (AVA). Performed comparative efficacy studies in animal models with rPA with licensed AVA. Conducted rPA- and AVA-immune passive transfer studies with homologous sera in mice and rabbits and completed a technical data package supporting phase 1 clinical trials and transition out of technology base.</li> <li>1612 Diagnostic Technologies - Compared alternative medical diagnostic technologies and specimen-processing methods compatible with a comprehensive integrated medical diagnostic system for the rapid recognition of infections by validated biological threats (bacteria, viruses, and toxins) in laboratory-based and field-based studies.</li> <li>802 Therapeutics, Bacterial - Tested selected immunomodulators in appropriate animal models for protection against plague and glanders.</li> <li>555 Therapeutics, Toxin - Initiated stability testing of the recombinant ricin A-chain being used for enzymatic activity studies.</li> <li>1233 Therapeutics, Viral - Determined dose and schedule for lead antiviral drug candidate for intravenous treatment of smallpox. Developed formulations or prodrugs to overcome problems with metabolism, bioavailability, or pharmacokinetics of compounds with otherwise acceptable antiviral profiles for orthopox and filoviruses.</li> </ul>		
Project TB3	Page 27 of 42 Pages	Exhibit R-2 (PE 0603384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>TB3</b>
<p><b>FY 2001 Accomplishments (Cont):</b></p> <ul style="list-style-type: none"> <li>• 394 Vaccines, Bacterial - Explored laboratory formulations of candidate glanders and plague vaccines using various adjuvants to enhance immunogenicity.</li> <li>• 250 Vaccines, Bacterial - Explored laboratory formulations of candidate next generation anthrax vaccine using various adjuvants to enhance immunogenicity.</li> <li>• 4129 Vaccines, Toxin - Completed the process development (60 L scale-up) for vaccine botulinum toxin serotypes C1 and E in the Pichia yeast system and completed efficacy studies in animal models. Initiated formulation studies on a combinatorial recombinant pentavalent botulinum toxin vaccine. Developed reagents and assays to determine the quality and quantity of botulinum toxin, staphylococcal enterotoxin B (SEB), and ricin vaccines during process development. Prepared technical data package to support Investigational New Drug (IND) submission to the FDA for SEB vaccine candidate.</li> <li>• 1416 Vaccines, Viral - Tested prime-boost vaccine candidates for Ebola virus in higher animal species models.</li> <li>• 2000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Evaluated promising medical biological defense technologies transitioning from the DARPA. These included novel molecular methods for selecting vaccine antigens, novel antibacterial agents, and plant-based expression of antibodies.</li> <li>• 1500 Bioadhesion Research - Continued research evaluating the mechanisms that block the adhesion of pathogens, whether microbes or toxins, to host cells thereby preventing initiation of the disease/intoxication process. The research was aimed toward the development of medical countermeasures for two biological warfare (BW) threats (B. anthracis and Brucellae species) and an infectious disease (ID) agent (Norwalk virus).</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>1689 Medical Chemical/Biological Counterterrorism Support - Continued research on the development of technologies to identify chemical and biological warfare agents (CBWA), laboratory procedures specific for the medical diagnosis or identification of CBWA exposure, information relevant to the collection of biological samples (blood, urine, or skin biopsy), and basic training in assay use and transition. Developed assays for use by the newly constituted National Guard Mobile Analytical Laboratory System (NGMALS).</li> </ul>		
<b>Total</b>	22394	
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>1000 Common Diagnostic Systems (DTO) - Complete an analysis of alternatives of portable nucleic analysis systems for detecting and identifying nucleic acids from a broad range of biological threat agents in clinical specimens. Prepare technical data package to support submission of a medical device application to the FDA prior to transitioning the candidate out of technology base.</li> <li>1600 Medical Countermeasures for Brucella (DTO) - Prepare pilot lot of lead live, attenuated vaccine candidates using processes consistent with the intent of cGMP and use the pilot vaccine lot to perform pre-investigational new drug (IND) animal studies. Determine relative efficacy of lead candidates against B. melitensis in higher animal species challenge model.</li> <li>800 Medical Countermeasures for Encephalitis Viruses (DTO) - Test vaccine candidates for VEE virus type 3A for efficacy in the higher animal species model and define surrogate markers of protection for validation as acceptable markers of vaccine efficacy. Redirect eastern equine encephalitis (EEE) and western equine encephalitis (WEE) virus vaccine development back to discovery and focus DTO on a multivalent VEE vaccine candidate.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1700 Multiagent Vaccines for Biological Threat Agents (DTO) - Complete testing for safety and efficacy in animal models of candidate products (individually and combined) intended for use in a multiagent vaccine.</li> <li>• 1205 Needle-less Delivery Methods for Recombinant Protein Vaccines (DTO) - Define the quantitative relationships between toxin-specific antibodies or other indicators of immunity in mucosal surfaces and blood. Continue standardization of animal models.</li> <li>• 940 Recombinant Plague Vaccine Candidate (DTO) - Perform studies to resolve which is the most appropriate higher animal species model for demonstrating capability of the recombinant plague vaccine candidate to provide protection from virulent aerosol and parental challenges. Continue expanded animal studies for immunogenicity and efficacy; continue to optimize formulation. Complete studies to establish a correlate of immunity.</li> <li>• 1500 Recombinant Protective Antigen (rPA) Anthrax Vaccine Candidate (DTO) - Complete the biochemical and biophysical characterization of the rPA vaccine candidate. Evaluate efficacy of rPA in higher animal species and perform passive transfer studies with human AVA-immunized sera in mice, rabbits, and higher animal species.</li> <li>• 1528 Diagnostic Technologies - Compare new diagnostic reagents, devices, and protocols in preclinical studies before transition to the regulatory compliant medical laboratory. Evaluate candidate diagnostic technologies in field-based studies and in a highly regulated medical center clinical laboratory prior to transitioning out of technology base.</li> <li>• 718 Therapeutics, Bacterial - Evaluate, in animal models, selected immunomodulators in combination with efficacious antibiotics for protection against bacterial threat agents.</li> <li>• 2573 Therapeutics, Toxin - Optimize formulation and pharmacodynamics of lead candidate licensed drugs that also inhibit staphylococcal enterotoxin B (SEB) induced intoxication.</li> </ul>		
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1436 Therapeutics, Viral - Continue evaluating formulations or prodrugs to overcome problems with metabolism, bioavailability, or pharmacokinetics of compounds with otherwise acceptable antiviral profiles for orthopox and filoviruses.</li> <li>• 249 Vaccines, Bacterial - Continue to identify and validate correlates of protective immunity against anthrax, plague, glanders, and Brucella, in support of selected vaccine candidates.</li> <li>• 653 Vaccines, Toxin - Complete formulation studies on a combinatorial recombinant pentavalent botulinum toxin vaccine. Perform formulation studies on a combinatorial SEB vaccine. Develop mutant recombinant ricin toxin A-chain (rRTA) antigens for potential use as vaccine candidates and initiate efficacy studies. Complete the development of reagents and assays to support process development of recombinant botulinum, ricin, and SEB vaccines. Initiate process development (60 L scale-up) for botulinum toxin serotypes D and G in the Pichia yeast system and complete efficacy studies. Execute process development for SE serotype A and complete efficacy studies. Define in vivo model systems for assessment of vaccine efficacy and surrogate endpoints of human efficacy for botulinum toxin and SEB intoxication. Plan transition of SEA and SEB vaccine candidates out of technology base.</li> <li>• 1011 Vaccines, Viral - Determine optimal dose and schedule for vaccination against Marburg virus.</li> <li>• 4000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Expand DARPA transition efforts to include the development of novel molecular methods for selecting vaccine antigens, additional novel antibacterial agents, plant-based expression of antibodies, novel toxin antagonists, and novel diagnostic methods.</li> </ul>		
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2000 Bioadhesion Program - Continue efforts to evaluate mechanisms that block the adhesion of pathogens, whether microbes or toxins, to host cells thereby preventing infection or intoxication. Define protective epitopes and novel delivery systems for use in vaccine formulations with a specific focus on early events in pathogenesis, especially bioadhesion. Use phage display peptide libraries to identify peptides mimetics for use in vaccine formulation. Construct vaccine candidates consisting of covalent conjugates and nanoparticles displaying those peptide mimetics. Characterize immune responses in humans who have experienced inhalation and cutaneous anthrax exposure to identify the most immunogenic epitopes. Use microarray technology to characterize the genetic response profiles of vaccinated and /or challenged animals leading to effective immunity.</li> <li>• 1250 Medical Countermeasures - Enhance advanced technology development of broad-spectrum therapeutic countermeasures for exposure to various classes of biological threats.</li> <li>• 500 Advanced Diagnostics - Enhance advanced technology development efforts toward the development of advanced medical diagnostic capabilities for early presymptomatic detection of biological warfare agent (BWA) infection.</li> <li>• 1250 Vaccines - Enhance advanced technology development and delivery of next-generation and generation-after-next vaccines and strategies, which will enhance the immune response to broad classes of biological threats.</li> </ul>		
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<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>3500 Medical Chemical/Biological Counterterrorism Preparedness Support - Continue research on the development of technologies to identify chemical and biological warfare agents (CBWA), laboratory procedures for medical diagnosis of CBWA exposure, sample (blood, urine, or skin biopsy) collection information, bioassay use, and transition training. The research effort involves examining the infected host's transcriptional response to infection, recognizing specific genes that are expressed or repressed during the early stages of infection, providing "signature" markers that can be used to rapidly diagnose infectious diseases and bioterrorism agents, and developing DNA chips and assays for associated disease markers that focus on genes and their products, which provide the best discrimination of host responses to infectious bioterrorism agents.</li> <li>506 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	29919	
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<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1700 Medical Countermeasures for Brucella (DTO) - Demonstrate effectiveness of candidate vaccine in higher animal species challenge model for protective efficacy against all three pathogenic species of Brucella. Determine relative efficacy of live vaccine candidates and subunit vaccines in higher animal species challenge model using Brucella melitensis (B. melitensis). Prepare a technical data package supporting an IND and transition the final vaccine candidate out of technology base.</li> <li>• 800 Medical Countermeasures for Encephalitis Viruses (DTO) - Perform formulation and vaccine interference studies for VEE multivalent vaccine (for protection against VEE IA/B, VEE IE, VEE 3A). Perform potency and stability studies on VEE vaccine components. Prepare a technical data package that addresses FDA requirements for an Investigational New Drug application and that supports transitioning a multivalent VEE vaccine out of technology base.</li> <li>• 1102 Needle-less Delivery Methods for Recombinant Protein Vaccines (DTO) - Perform efficacy studies using downselected formulation/device in animal model. Propose in vitro correlate of immunity for surrogate endpoint of clinical efficacy.</li> <li>• 1000 Recombinant Plague Vaccine Candidate (DTO) - Continue expanded studies in higher animal species for immunogenicity and efficacy, including the evaluation of long-term immunity, correlates of immunity, and range of protection against other virulent strains of Y. pestis. Complete a revised technical data package based on completed studies, to facilitate transition out of technology base.</li> <li>• 4538 Diagnostic Technologies - Compare alternative diagnostic technologies for the rapid identification of biological threat agents in laboratory-based and field-based studies prior to transition to the field medical laboratory. Compare overlapping diagnostic technologies that can be integrated into a single comprehensive platform capable of detecting and identifying a broad range of biological threat agents in clinical specimens in laboratory-based and field-based studies.</li> </ul>		
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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1098 Therapeutics, Bacterial - Conduct advanced comparative assessment of immunomodulators and other types of broad-spectrum compounds for safety and efficacy against multiple biological threat agents.</li> <li>• 4692 Therapeutics, Toxin - Prepare sufficient amounts of lead inhibitors of botulinum and SEB intoxication for testing in vivo.</li> <li>• 2301 Therapeutics, Viral - Evaluate the combined approach of antiviral drug therapy and immunotherapy in treatment of disease from filoviruses. Continue evaluating formulations or prodrugs to overcome problems with metabolism, bioavailability, or pharmacokinetics of compounds with otherwise acceptable antiviral profiles for orthopox and filoviruses.</li> <li>• 2111 Vaccines, Bacterial - Initiate a comparison of the safe and most efficacious vaccine candidates against selected agent exposures. Analyze study data to determine best glanders vaccine candidate(s). Incorporate data for Brucella and plague vaccine candidates into technical data packages for these vaccine candidates.</li> <li>• 669 Vaccines, Toxin - Complete process development (60 L scale-up) for botulinum toxin serotypes D and G in the Pichia yeast system. Complete efficacy studies on recombinant ricin toxin A-chain (rRTA) vaccine candidates and downselect best rRTA vaccine candidate.</li> <li>• 2189 Vaccines, Viral - Determine and test the optimal vaccine strategy to protect against Ebola virus. Complete the development of vaccine candidates for WEE virus.</li> </ul>		
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<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 12000 Defense Advanced Research Projects Agency (DARPA) Program Transition - Continue expansion and definition of medical biological defense technologies transitioned from the DARPA. Characterize and perform process development on candidate vaccines and therapeutics deemed sufficiently mature for transitioning out of technology base.</li> </ul> <p><b>Total</b>      34200</p>																																							
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 7%;"><u>FY 2001</u></th> <th style="width: 7%;"><u>FY 2002</u></th> <th style="width: 7%;"><u>FY 2003</u></th> <th style="width: 7%;"><u>FY 2004</u></th> <th style="width: 7%;"><u>FY 2005</u></th> <th style="width: 7%;"><u>FY 2006</u></th> <th style="width: 7%;"><u>FY 2007</u></th> <th style="width: 7%;"><u>To Compl</u></th> <th style="width: 7%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>MB4 MEDICAL BIOLOGICAL DEFENSE (DEMVAL)</td> <td>28465</td> <td>34343</td> <td>42617</td> <td>46775</td> <td>10271</td> <td>14874</td> <td>12361</td> <td>Cont</td> <td>Cont</td> </tr> <tr> <td>MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)</td> <td>15772</td> <td>48500</td> <td>44718</td> <td>20284</td> <td>35904</td> <td>36056</td> <td>39815</td> <td>Cont</td> <td>Cont</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	MB4 MEDICAL BIOLOGICAL DEFENSE (DEMVAL)	28465	34343	42617	46775	10271	14874	12361	Cont	Cont	MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)	15772	48500	44718	20284	35904	36056	39815	Cont	Cont
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																														
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<div style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>Project TB3</span> <span>Page 36 of 42 Pages</span> <span>Exhibit R-2 (PE 0603384BP)</span> </div>																																							

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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
TC3      MEDICAL CHEMICAL DEFENSE (ADV TECH DEV)	9968	11302	12156	13423	13773	12907	13011	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project TC3 MEDICAL CHEMICAL DEFENSE (ADV TECH DEV):** This project supports the investigation of new medical countermeasures to include antidotes, pretreatment drugs, and topical skin protectants to protect U.S. forces against known and emerging CW threat agents. Capabilities are maintained for reformulation, formulation, and scale-up of candidate compounds using current good laboratory practices. Analytical stability studies, safety and efficacy screening, and preclinical toxicology studies are performed prior to full-scale development of promising pretreatment or treatment compounds. Categories for this project include Defense Technology Objectives (DTOs), science and technology program areas (Pretreatments, Therapeutics, and Diagnostics), and directed research efforts (Low Level Chemical Agent Exposure and Fourth Generation Agents).

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<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 1300 Active Topical Skin Protectant (aTSP) (DTO) - Demonstrated the efficacy of protection against nerve and mustard agents of aTSP candidate formulations in two animal species. Evaluated effectiveness of combinations of selected reactive moieties.</li> <li>• 700 Chemical Agent Prophylaxis II (DTO) - Examined scavengers derived from human proteins for immune response. Selected best nerve agent bioscavenger candidate(s) based on comparison of performance in decision tree network and other differentiating studies.</li> <li>• 1000 Medical Countermeasures for Vesicant Agents II (DTO) - Evaluated efficacy of lead vesicant (mustard) countermeasure compounds using a decision tree network. Began vesicant therapy candidate safety and efficacy studies in two animal models.</li> <li>• 55 Diagnostics - Evaluated modified advanced development equipment or technologies for far-forward screening and confirmation of exposure to mustard and nerve agents. Conducted surveys of existing commercial technologies and tested suitability of these items.</li> <li>• 1759 Pretreatments - Tested promising new catalytic scavengers for efficacy and safety in two animal models. Determined 3D x-ray crystallographic structure of human carboxylesterase and paraoxonase-1.</li> </ul>		
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<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>• 4154 Therapeutics - Evaluated the efficacy of lead vesicant countermeasure compounds identified in earlier screening efforts using a drug decision approach (decision tree network). Began vesicant candidate safety and efficacy studies in two animal models. Evaluated the optimal treatment strategy for mustard-induced ocular injury using steroid/antibiotic combinations. Evaluated commercially available off-the-shelf wound healing products to treat mustard-induced injuries. Determined lead anticholinergic drugs for use with midazolam as therapy for nerve agent exposure.</li> <li>• 1000 Fourth Generation Agents (FGAs) - Conducted studies to determine best available countermeasures to FGAs based upon protection against lethality, pathology, physiological dysfunction, and behavioral incapacitation.</li> </ul>		
<b>Total</b>	9968	
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 1300 Active Topical Skin Protectant (aTSP) (DTO) - Complete aTSP formulation studies and demonstrate efficacy against estimated exposure levels of chemical warfare agents. Select candidate(s) for transition out of technology base.</li> <li>• 1000 Chemical Agent Prophylaxis II (DTO) - Establish higher animal species models to evaluate lead scavengers for safety and efficacy. Convene Milestone In-Process Review (IPR) to approve transition of candidate scavengers to advanced development. Transition a chemical warfare agent prophylactic that will protect the warfighter for a period greater than eight hours against exposure to five times the Median Lethal Dosage (LD50) of nerve agent.</li> </ul>		
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 2000 Medical Countermeasures for Vesicant Agents II (DTO) - Identify combination therapy approaches that provide highest level of protection in animal models for safety and efficacy advanced screening. Conduct pharmacokinetic and formulation studies of vesicant countermeasure candidates. Initiate collection of preclinical data that will allow a preliminary safety assessment of toxicokinetics (TK) and Absorption, Distribution, Metabolism, and Excretion (ADME) of proposed treatments. Begin to design studies that conform to regulatory requirements.</li> <li>• 361 Diagnostics - Investigate the toxicokinetics (TK) and absorption, distribution, metabolism, and excretion (ADME) of enzymatic metabolites following cyanide intoxication.</li> <li>• 1677 Pretreatments - Complete development/validation of a process capable of producing sufficient amounts of enzyme scavenger material for clinical trials. Determine safety and efficacy of scavenger candidates in two animal species. Complete program studies and prepare a technical data package to address Food and Drug Administration (FDA) requirements for an Investigational New Drug (IND) application that supports transition out of technology base. Continue development of the transgenic animal model. Initiate investigation of the structure/activity relationships of treatment compounds used to prevent cyanide intoxication. Conduct pharmacology and toxicology studies on candidate compounds. Continue physiology based pharmacokinetics studies of the catalytic scavengers identified (carboxylesterase and paraoxonase-1).</li> <li>• 3273 Therapeutics - Determine optimal combination of midazolam and anticholinergic drug and order of administration to obtain maximal anticonvulsant effect against seizures in a higher animal species model. Conduct studies designed to address FDA requirements to license ocular rinse that optimally treats mustard-induced injuries. Select combination therapy approaches that provide highest level of ocular protection and conduct safety and efficacy advanced screening in animal models. Study efficacy and safety of vesicant countermeasure candidates.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>	PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>	PROJECT <b>TC3</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>1500 Fourth Generation Agents (FGAs) - Begin downselection process of best available countermeasure(s) against FGAs. Initiate formulation and bulk production feasibility efforts for countermeasures.</li> <li>191 SBIR - Small Business Innovative Research.</li> </ul> <b>Total</b> 11302		
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>4000 Medical Countermeasures for Vesicant Agents II (DTO) - Complete preclinical safety and efficacy studies of selected vesicant therapy candidate compounds. Complete pharmacokinetic studies of vesicant countermeasure candidates. Perform additional studies necessary to completely characterize candidate therapy.</li> <li>758 Diagnostics - Evaluate hand-held cholinesterase (ChE) monitor for hospital use. Validate immobilized cholinesterases and nerve agent hydrolyzing enzymes as diagnostics for nerve agent exposure.</li> <li>2473 Pretreatments - Complete physiologically based pharmacokinetic model studies of expected human efficacy with various catalytic scavengers. Verify adequacy of transgenic animal model to produce recombinant catalytic enzyme scavenger.</li> <li>2925 Therapeutics - Select optimal anticholinergic drug for inclusion with midazolam and establish optimal suggested treatment protocol in higher animal species. Complete preclinical studies of selected vesicant therapy candidate compounds. Evaluate commercially licensed wound healing medical therapeutics for mustard-induced injuries. Evaluate therapeutic agents for pulmonary edema produced by whole-body exposure to CWAs.</li> </ul>		
Project TC3	Page 41 of 42 Pages	Exhibit R-2 (PE 0603384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA3 - Advanced Technology Development</b>				PE NUMBER AND TITLE <b>0603384BP CHEMICAL/BIOLOGICAL DEFENSE (ADVANCED DEVELOPMENT)</b>				PROJECT <b>TC3</b>	
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 2000 Fourth Generation Agents (FGAs) - Perform advanced assessment of medical countermeasures in guinea pigs by evaluation of physiological and histopathological parameters. Evaluate bioscavenger pretreatment as medical countermeasure against FGAs in guinea pigs. Conduct advanced assessment (pharmacokinetic and bioavailability) studies of lead medical countermeasures to FGAs in higher animal species for human efficacy estimation. Develop surrogate markers in guinea pigs for alternative medical countermeasures for FGA exposure. Develop downselection criteria for choice of the best of the candidates for improved medical countermeasures to FGA exposure.</li> </ul>									
<b>Total</b> 12156									
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
MC4 MEDICAL CHEMICAL DEFENSE (DEMVAL)	2078	1876	1764	1754	1705	2064	2107	Cont	Cont
MC5 MEDICAL CHEMICAL DEFENSE (EMD)	1050	1463	1973	1486	1448	1727	1763	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project TC3</span> <span>Page 42 of 42 Pages</span> <span>Exhibit R-2 (PE 0603384BP)</span> </div>									

## **BUDGET ACTIVITY 4**

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## UNCLASSIFIED

## CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE  
February 2002

BUDGET ACTIVITY

RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation

PE NUMBER AND TITLE

0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	82315	89756	144790	100512	66662	45394	43976	Continuing	Continuing
BJ4 BIOLOGICAL DEFENSE (DEMVAL)	5765	1560	3661	19163	19329	0	0	0	49478
CA4 CONTAMINATION AVOIDANCE (DEMVAL)	8866	16274	16963	0	0	0	0	0	42103
CO4 COLLECTIVE PROTECTION (DEMVAL)	1454	0	4390	0	0	0	0	0	5844
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	15709	15243	13423	20442	21137	24459	25516	Continuing	Continuing
DE4 DECONTAMINATION SYSTEMS (DEMVAL)	3368	6143	6972	12378	14220	3997	3992	Continuing	Continuing
HS4 HOMELAND SECURITY (DEMVAL)	0	0	55000	0	0	0	0	0	55000
IP4 INDIVIDUAL PROTECTION (DEMVAL)	16610	14317	0	0	0	0	0	0	30927
MB4 MEDICAL BIOLOGICAL DEFENSE (DEMVAL)	28465	34343	42617	46775	10271	14874	12361	Continuing	Continuing
MC4 MEDICAL CHEMICAL DEFENSE (DEMVAL)	2078	1876	1764	1754	1705	2064	2107	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** Operational forces have an immediate need to survive, safely operate, and sustain operations in a chemical and biological (CB) agent threat environment across the continuum of global, contingency, special operations/low intensity conflict, counternarcotics, and other high risk missions. This program element supports the System Development and Demonstration (SDD) of CB defensive equipment, both medical and non-medical. DoD missions for Homeland Security and for civil support operations have recently expanded and have resulted in providing focus to develop technologies to support CB counterterrorism initiatives.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

## PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)**

These projects have been structured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, force protection (individual and collective), decontamination, and medical countermeasures. This program is enhanced using Counterproliferation Support Program funding. SDD is conducted for: an array of chemical/biological/toxin detection and warning systems to include ARTEMIS, (formerly known as the Artemis Joint Service Warning and Identification Light Detection and Ranging (LIDAR) Detector (formerly known as JSWILD)); decontamination capabilities to include the sorbent technology, the Joint Service Fixed Site Decontamination (JSFXD) and the Joint Service Sensitive Equipment Decontamination (JSSED) programs. System development and demonstration is also conducted for the transition of biological detection components (major thrusts include: (1) early warning; (2) collector concentrators; (3) generic detection; and (4) improved reagents) for the future Joint Biological Point Detection System (JBPDS) Block II, Joint Biological Standoff Detection System, (JBSDS) and Joint Biological Tactical Detection System (JBTDS).

In the medical chemical/biological defense area, SDD is conducted for improved medical equipment, vaccines, and drugs essential to counteracting lethal and human performance degrading effects of chemical and biological agent threats. Specific items include improvements to nerve agent antidotes, topical skin protectants, anticonvulsants, biological agent diagnostics, and vaccines to protect against various Biological Warfare (BW) agents.

The Homeland Security System Development and Demonstration program is focused on supporting a dual use operational capability for integrated biological-surveillance, detection, and alerting in the National Capital Region (NCR) with technology insertions for improved performance and response.

This Program Element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include SDD in the area of chemical/biological defense equipment and is correctly placed in Budget Activity 4.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/****BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)****B. Program Change Summary:**

		<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>
Previous President's Budget (FY 2002 PB)		84992	82636	68042
Appropriated Value		89800	90336	0
Adjustments to Appropriated Value		0	0	0
a. Congressional General Reductions		-627	-580	0
b. SBIR/STTR		-1438	0	0
c. Omnibus or Other Above Threshold Reductions		0	0	0
d. Below Threshold Reprogramming		-5236	0	0
e. Rescissions		-184	0	0
Adjustments to Budget Years Since FY 2002 PB		0	0	76748
Current Budget Submission (FY 2003 PB)		82315	89756	144790

**Change Summary Explanation:**

**Funding:** FY03 - Increase to the development program to fund a Homeland Security Support effort identified in the new Project HS4 (+\$55,000K); realignment of the JBPDS Block II program (\$3,000K) in project BJ4; vaccine programs realigned into Budget Activity 4 (MB4) from Budget Activity 5 (MB5) and production (+\$10,801K); realignment of the CBDP program to support ARTEMIS and Joint Effects Model (+\$8,376K); adjustment for inflation assumptions (-\$429K).

**Schedule:****Technical:****C. Other Program Funding Summary:** See section B in the R2A's

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>BJ4</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
BJ4 BIOLOGICAL DEFENSE (DEMVAL)	5765	1560	3661	19163	19329	0	0	0	49478

**A. Mission Description and Budget Item Justification:**

**Project BJ4 BIOLOGICAL DEFENSE (DEMVAL):** The Department of Defense (DoD) Biological Defense mission area requires the detection and identification of biological threat agents to provide early warning capabilities at high value mobile and fixed site locations. Collection, detection, and identification of biological warfare (BW) agents are among the highest Commander in Chief/Joint Requirements Oversight Council (CINC/JROC) Counterproliferation priorities. Next generation biological detection systems will provide detection, identification, warning, and sample collection for verification of large area and/or point source biological attacks. This project supports the Technology Transition (TT) Bio program and Joint Biological Point Detection System (JBPDS) Blk II. The TT Bio program initiates the system development and integration of lightweight early warning candidates for the Joint Biological Standoff Detection System (JBSDS) program.

**FY 2001 Accomplishments:**

- 2098 JBPDS Block II - Initiated modeling, design, fabrication, and test of next generation Biological Aerosol Warning System (BAWS) prototype (one prototype at \$150K).
- 2461 TT Bio - Initiated system development and integration of a lightweight early warning system candidate for the Joint Biological Standoff Detection System (JBSDS).
- 846 TT Bio - Continued development of critical reagents for fielded biological detection systems.

Project BJ4
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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>BJ4</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>360 TT Bio - Initiated development of a lightweight short range biological detection system as a candidate for the Joint Biological Standoff Detection System (JBSDS).</li> </ul> <b>Total</b> 5765		
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>990 TT Bio - Continue system development and integration of the lightweight, early warning, JBSDS system.</li> <li>544 TT Bio - Initiate testing of the integrated, lightweight, early warning JBSDS system.</li> <li>26 SBIR - Small Business Innovative Research.</li> </ul> <b>Total</b> 1560		
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>1603 JBPDS Block II - Develop software and hardware advances to BAWs algorithms that will provide increased reliability and enhance the JBPDS Block II ability to discriminate background environment aerosol components, without sacrificing sensitivity and responsiveness to biological warfare attacks.</li> <li>1382 JBPDS Block II - Establish core and Joint service IPTs and initiate product improvements of Line Replaceable Units (LRUs), through design, procurement, fabrication, and critical item testing.</li> <li>676 TT Bio - Initiate the system development of enhanced environmental and military hardening packages for lightweight early warning JBSDS candidate systems.</li> </ul> <b>Total</b> 3661		
Project BJ4 <div style="text-align: center;">Page 5 of 112 Pages</div> <div style="text-align: right;">Exhibit R-2 (PE 0603884BP)</div>		



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>BJ4</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
BJ5 BIOLOGICAL DEFENSE (EMD)	7575	12803	14660	17977	17315	37632	35708	Cont	Cont
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	15709	15243	13423	20442	21137	24459	25516	Cont	Cont
JP0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	27260	36324	67528	75245	73514	56735	50879	Cont	Cont
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	4284	1913	2010	1850	1894	2251	2301	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project BJ4</span> <span>Page 6 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>BJ4</b>
<p><b>C. <u>Acquisition Strategy:</u></b></p> <p>TT Bio                      This program initiates the system development and integration of modified commercial off the shelf (COTS) technologies as JBSDS candidate systems. The program focuses on the rapid development, testing, and fielding of leading systems to meet urgent warfighter needs for early warning of Biological Warfare (BW) agent attacks.</p> <p>JBPDS Block II            A spiral development effort, initiated with a government run concept analysis in FY00, MS B/Development Contract Award, FY04, and MS C, Low Rate Initial Production in FY07, and Full Rate Production in FY08. A concept analysis consisting of modeling and simulation results will be given to one or more contractors for brassboard development and testing. A preferred design will be carried through System Development by a prime systems contractor. Throughout System Development, the program will advance biological point detection capabilities (smaller, lighter, lower power, dry detection technologies, etc.) for operational level systems, and spiral incremental improvements into the Block I production program as they become available.</p>		
Project BJ4	Page 7 of 112 Pages	Exhibit R-2 (PE 0603884BP)

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**BJ4****D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JBPDSBLK2																																
Concept Development/Hardware Exploration Phase I					1Q	<div></div>			4Q																							
Initial Overarching Integrated Process Team (IT) Convened: February 18, 1999													1Q	2Q																		
Analysis of Alternatives/Concept Studies					1Q	<div></div>			1Q																							
Solicitation for EMD Contract													1Q	2Q																		
Milestone B															1Q																	
JBSDS																																
Component Advanced Development					1Q	<div></div>								2Q																		
TT Bio																																
Transition Lightweight, Environmentally Enhanced, and Hardened JBSDS Components into SD & D													1Q																			

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**BJ4**

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
BAWS Detector Algorithm Improvement Studies	MIPR	Hanscom AFB/MIT-Lexington, MA	F	0	0	NONE	0	NONE	100	1Q FY03	2673	2773	0
Adv LRUs and Breadboard	MIPR	Hanscom AFB/MIT-Lexington, MA	F	0	0	NONE	0	NONE	1162	1Q FY03	0	1162	0
HW S - Design Advanced Prototype BAWS	MIPR	Hanscom AFB/MIT-Lexington, MA	F	0	1238	1Q FY01	0	NONE	517	1Q FY03	1932	3687	0
TT Bio													
HW S - TT Bio JBSDS LIDAR	C/CPFF	Science and Engineering Services, Inc., Burtonsville, MD	C	0	2461	Jan-01	1410	Jan-02	500	Jan-03	0	4371	0
HW C - TT Bio	MIPR	USAMRIID, Ft. Detrick, MD	U	469	246	Jan-01	0	NONE	0	NONE	0	715	0
SW SB - TT Bio	MIPR	NMRI, Bethesda, MD	U	214	200	Jan-01	0	NONE	0	NONE	0	414	0
HW C - TT Bio	MIPR	SBCCOM, Edgewood, MD	U	0	100	Jan-01	0	NONE	0	NONE	0	100	0
HW C - TT Bio	MIPR	Dugway Proving Ground, UT	U	150	150	Jan-01	0	NONE	0	NONE	0	300	0
HW S - TT Bio Modified Short Range Biological Standoff Detection System	C/CPFF	Fibertek Inc., Herndon, VA		0	360	Aug-01	0	NONE	0	NONE	0	360	0
Subtotal I. Product Development:				833	4755		1410		2279		4605	13882	

Remarks: HW S - FY01 - 1 prototype at \$150K

Project BJ4

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Exhibit R-3 (PE 0603884BP)

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE  
February 2002

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**BJ4**

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
ES S - BAWS Integration	MIPR	Hanscom AFB/MIT-Lexington, MA	F	0	498	1Q FY01	0	NONE	0	NONE	0	498	0
Engineering Support	MIPR	Various	U	0	0	NONE	0	NONE	308	1Q FY03	3578	3886	0
RFP Development and Evaluation	MIPR	Various	U	0	0	NONE	0	NONE	426	1Q FY03	691	1117	0
Subtotal II. Support Costs:				0	498		0		734		4269	5501	

Remarks:

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
Early Test and Evaluation of Design	PO	SBCCOM, APG, MD	U	0	0	NONE	0	NONE	332	1Q FY03	1435	1767	0
OTE SB - Early Operational Assessment for Block II	MIPR	Various	U	0	362	1Q FY01	0	NONE	0	NONE	1649	2011	0
Subtotal III. Test and Evaluation:				0	362		0		332		3084	3778	

Remarks:

Project BJ4

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Exhibit R-3 (PE 0603884BP)

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>											DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>						PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>BJ4</b>	
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBPDSBLK2													
HW C - Design Advanced Bio-Suite Hardware	MIPR	Various	U	0	0	NONE	0	NONE	140	1Q FY03	2479	2619	0
TT Bio													
PM/MS S - TT Bio	Various	JPO-BD, Falls Church, VA	U	51	150	Oct-00	124	Oct-01	176	Oct-02	0	501	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	26	2Q FY02	0	NONE	0	26	0
Subtotal IV. Management Services:				51	150		150		316		2479	3146	
Remarks:													
TOTAL PROJECT COST:				884	5765		1560		3661		14437	26307	

CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation				PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)				PROJECT CA4		
COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CA4	CONTAMINATION AVOIDANCE (DEMVAL)	8866	16274	16963	0	0	0	0	0	42103

Project CA4

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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>

**A. Mission Description and Budget Item Justification:**

**Project CA4 CONTAMINATION AVOIDANCE (DEMVAL):** This DEMVAL funding supports Component Advanced Development and System Integration (CAD/SI) of reconnaissance, detection, and identification equipment. Items of equipment in this project are: (1) Nuclear, Biological and Chemical Reconnaissance System (NBCRS) Fox Training System, (2) Artemis (formerly known as JSWILD), (3) the Chemical Biological Mass Spectrometer (CBMS), (4) the Joint Effects Model (JEM), and the Mobile Chemical Agent Detector (MCAD). The NBCRS Fox Training System will operate on virtual terrain and simulate Nuclear, Biological and Chemical threat to allow integrated training of NBCRS Fox crews. Artemis will be a near-real time, modular, on-the-move, standoff Chemical Warfare (CW) agent detection and identification capability, with 360-degree coverage, from a variety of platforms, at ranges on the order of 20 kilometers (km) or more. Fiscal Year (FY) 2001 is addressed within item CP4 - Counterproliferation Support (DEMVAL). The CBMS is a detector capable of both biological and chemical agent detection and identification. The CBMS Block I system is a component of the P3I Biological Integrated Detection System (BIDS). The CBMS Block II system is an improved system that is being developed for inclusion in the NBCRS Block II system (IAV-NBCRV) and the Joint Service Lightweight NBCRS system. The CBMS II is being further enhanced to allow operation as a stand-alone system. JEM will be a general-purpose, accredited model for predicting NBC hazards associated with the release of contaminants into the environment. JEM will be developed in blocks and will be capable of modeling hazards in a variety of scenarios including: counterforce, passive defense, accident and/or incidents (Block I), high altitude releases, urban NBC environments (Block II) and building interiors, and human performance degradation (Block III). The MCAD is a commercially available remote sensing chemical vapor detector being evaluated in FY02 for possible applications in urban or military situations.

Project CA4

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Exhibit R-2 (PE 0603884BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 1502 ARTEMIS - Completed Analysis of Alternatives (AoA) (including modeling and simulation) to validate technology alternatives. Completed independent Total Ownership Cost (TOC) analysis.</li> <li>• 458 ARTEMIS - Supported initiation of the Joint Service Integration Group (JSIG) Contamination Avoidance (CA) Mission Needs Analysis (MNA).</li> <li>• 888 ARTEMIS - Initiated program acquisition strategy and documentation. Joint AoA Integrated Product Team (IPT) provided support, oversight and coordination of AoA.</li> <li>• 1923 CBMS - Initiated design and planning to update CBMS Block II for fixed site and stand-alone applications.</li> <li>• 250 JEM - Initiated IPT to evaluate hazard prediction technologies. Initiated program planning.</li> <li>• 3745 NBCRS Blk I Fox (Training System) - Developed two NBCRS Fox Training Systems for installation at Fort Polk, LA (\$1.8M each).</li> <li>• 100 NBCRS Blk I Fox (Training System) - Tested NBCRS Fox Training Systems. Testing included software validation, technical tests on all system components, a Limited User Test, and a maintenance evaluation. Trainers were designed and tested uniquely for each facility installation.</li> </ul>		
<b>Total</b>	8866	
<div> <div>Project CA4</div> <div>Page 14 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 1274 ARTEMIS - Prepare source documentation for Milestone (MS) B. Maintain document library and information network for all data, research, and other program information. Issue draft Request for Proposal (RFP) for System Development and Demonstration (SDD) prototypes. Perform financial management, scheduling, planning, and reporting.</li> <li>• 990 ARTEMIS - Develop initial systems architecture and draft systems specification through a Joint Systems Engineering Integrated Product Team (IPT). Conduct risk analyses and develop risk mitigation plan.</li> <li>• 446 ARTEMIS - Conduct, as an integral part of the systems engineering process, a supportability analysis. Conduct initial Joint Training Planning Process Methodology and develop initial Joint System Training Plan. Develop acquisition logistics support plan for MS B through a Joint Product Support IPT.</li> <li>• 1351 ARTEMIS - Establish test strategy and develop test methodology. Develop initial Test &amp; Evaluation Master Plan (TEMP) through a Joint Test &amp; Evaluation IPT.</li> <li>• 3665 ARTEMIS - Continue development of key components of an active emitter multi-wave Light Detecting and Ranging (LIDAR) technology to develop a system architecture and to reduce overall programmatic risk by utilizing Component Advanced Development (CAD). Key components considered high risk are solid state lasers, non-consumable detectors, and advanced detection algorithms. Demonstrate and validate performance of these components.</li> <li>• 750 ARTEMIS - Support Systems Engineering IPT through Simulation Based Acquisition (SBA) activities to reduce cost, schedule, and performance risks; increase the quality, military worth, and supportability of fielded systems; and reduce total ownership costs throughout the system life cycle.</li> <li>• 250 MCAD - Conduct initial agent and interference trials.</li> <li>• 1750 MCAD - Conduct interference and operational trials in an urban environment.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>4154 MCAD - Evaluate capability of MCAD to meet operational requirements of all Services and emerging National Defense requirements for remote detection of chemical agents and other hazardous materials. NOTE: Defense Emergency Response Fund (DERF) Enhanced Force Protection - \$1018K received to be utilized in support of MCAD purchase, testing, and evaluation in the National Capital Region (NCR).</li> <li>1368 NBCRS Blk I Fox (Training System) - Initiated planning and equipment design for two Fox Training Systems for U.S. Forces Korea (USFK).</li> <li>276 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	16274	
<div> <div>Project CA4</div> <div>Page 16 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 2679 ARTEMIS - Complete source documentation for MS B. Finalize and issue RFP, conduct source selection, award contract for System Development and Demonstration (SDD) prototypes. Conduct Integrated Baseline Review (IBR) and System Requirement Review (SRR) with SDD contractor.</li> <li>• 4555 ARTEMIS - Initiate design, build, and integrate SDD prototypes for use in developmental testing.</li> <li>• 2000 ARTEMIS - Initiate design, documentation, development of Artemis system software. In addition, initiate effort to develop interface between Artemis and Joint Warning and Reporting Network (JWARN).</li> <li>• 2255 ARTEMIS - Develop detailed test support plan. Purchase additional test equipment to support range and chamber testing of a long range active LIDAR standoff detection system.</li> <li>• 1640 JEM Block I - Complete transition from tech base. Integrate counterforce, passive defense, and hazard/incident software models into a complete system. Develop logistics documentation, initiate Post Deployment Software Support planning, and establish online document library and information network for all data, research, and other program information. Update MS B program documentation and conduct MS B decision. Conduct source selection for development of a standardized hazard prediction model. Perform financial management, scheduling, planning, and reporting.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>819 JEM Block I - Develop Test and Evaluation Master Plan (TEMP) and Verification, Validation, and Accreditation Plan. Complete analysis of existing field test data associated with the hazard prediction models Vapor, Liquid and Solid Tracking (VLSTRACK), Hazard Prediction and Assessment Capability (HPAC), and Personal Computing Program for the Chemical Hazard Prediction (D2PC) and identify data gaps. Prepare for and conduct Early Operational Assessment (EOA). Initiate Independent Validation and Verification (IV&amp;V) effort. Develop and refine warfighter use cases. Perform engineering analysis and evaluation of software design documentation. Establish and conduct Change Control Board. Continue technical data transition of HPAC, VLSTRACK, and D2PC models.</li> <li>3015 JEM Block I - Award contract for development of engineering builds (software only) in support of the Block I effort.</li> </ul>		
<b>Total</b>	16963	
<div>Project CA4</div> <div>Page 18 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>CA4</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
CA5 CONTAMINATION AVOIDANCE (EMD)	59268	71421	58341	36689	18929	30581	13468	Cont	Cont
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	9018	0	0	0	12194	15956	31916	Cont	Cont
JA0001 ARTEMIS ACTIVE STANDOFF CW DETECTION SYSTEM	0	0	0	0	0	0	7979	Cont	Cont
JCA208 JOINT EFFECTS MODEL	0	0	0	0	990	988	987	Cont	Cont
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	0	6031	19411	20437	26991	30273	Cont	Cont
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	68877	591	1035	0	0	0	0	0	70503
MA0601 RECON SYSTEM, FOX NBC (NBCRS) MODS	57651	6312	16474	24295	25268	24931	997	Cont	Cont
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	0	0	28345	50623	66594	74019	81867	Cont	Cont
N00041 SHIPBOARD DETECTOR MODIFICATIONS	4696	4670	4673	0	0	0	0	0	14039
<div style="display: flex; justify-content: space-between;"> <span>Project CA4</span> <span>Page 19 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>CA4</b>	
<b>B. <u>Other Program Funding Summary (Cont):</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	0	10327	0	15386	23230	39891	44881	Cont	Cont
<div>Project CA4</div> <div>Page 20 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>
<p><b>C. <u>Acquisition Strategy:</u></b></p> <p>NBCRS BLK I      Fox (Training System) Task order to ITT Industries to develop, deliver, and install two NBCRS Fox Trainers to Fort Hood, TX, and two NBCRS Fox Trainers to Fort Polk, LA. Trainers operate on virtual terrain and simulate Nuclear, Biological, and Chemical threat to allow integrated training of NBCRS Fox crews. The FY02 task order will be awarded to develop, deliver, and install two NBCRS Fox Trainers for U.S. Forces Korea (USFK).</p> <p>ARTEMIS      Formerly known as JSWILD. The Artemis program will use an evolutionary acquisition (Block) approach for design, development, testing, and fielding. Develop a system specification and issue a draft Request for Proposal (RFP) prior to Milestone (MS) B to resolve industry comments. Award a cost-plus type contract after MS B, for engineering development models in support of the System Development and Demonstration (SDD) phase. Conduct developmental testing and early operational assessments of engineering development models to ensure compliance with the Operational Requirements Document (ORD). After MS C, award a fixed-fee contract for Low Rate Initial Production (LRIP) units to support Initial Operational Test &amp; Evaluation (IOT&amp;E). A Full Rate Production (FRP) option to this contract will be exercised after the FRP Decision Review.</p> <p>CBMS I      System Development and Demonstration (SDD) phase was developed under a task order contract with Bruker Industries. The system was type-classified as part of the P3I BIDS system. The CBMS II was developed under an interagency agreement with Oak Ridge National Lab, with Orbital Sciences Corp as the main subcontractor. The system will be type classified as a component of the Fox Block II system (IAV-NBCRV) and the Joint Service Lightweight NBCRS system. An effort is being initiated to configure the system as a stand-alone.</p>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CA4</b>
JEM	The JEM program will use a three block evolutionary acquisition approach for the design, development, testing, and fielding of JEM (Blocks I, II, and III). Upon completion of an Independent Model Analysis, JEM interface, credibility and performance requirements will be refined in an iterative process through a series of design reviews, using cost-effective graphical storyboarding prior to actual implementation of the algorithms and data harvested from the legacy Nuclear, Biological, and Chemical (NBC) models. A cost plus award/incentive fee contract will be used for model development.	
MCAD	The MCAD evaluation will be conducted as a one-year effort. The program will utilize sole-source contracting and other expedited acquisition procedures to permit an accurate and rapid determination of MCAD capability to fit emerging National Defense and military requirements.	
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>					PROJECT <b>CA4</b>	

<b>D. <u>Schedule Profile:</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARTEMIS																																
Concept Exploration												1Q																				
Analysis of Alternatives																																
Milestone Component Advanced Development (CAD)												1Q																				
Milestone C Low Rate Initial Production (LRIP)												1Q																				
Component Advanced Development												1Q																				
BLK I - Release Draft Request for Proposal (RFP)													3Q																			
BLK I - Milestone B Decision														1Q																		
BLK I - Release Request for Proposal (RFP)														1Q																		
BLK I - Award Contract (Prototype)															3Q																	
BLK I - Prototype Hardware/Software Development															3Q																	
BLK I - System Requirements Review (SRR)																	1Q															
BLK I - Integrated Baseline Review (IBR)																	1Q															

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>					PROJECT <b>CA4</b>	

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARTEMIS (Cont)																																
BLK I - System Function Requirements (SFR)																3Q																
BLK I - Early Prototypes Delivered																	3Q															
BLK I - Prototype Developmental Testing (DT I)																	3Q	4Q														
BLK I - Early Operational Assessment																				1Q												
BLK I - Advanced Prototypes Delivered																					2Q											
BLK I - Prototype Developmental Testing (DT II)																					2Q											
BLK I - Operational Assessment (OA)																						3Q										
Developmental Test I (DT I) LAV variant																													2Q			
BLK I - Award Low Rate Initial Production (LRIP) Contract / Option																													2Q			
CBMS																																
Block II - Engineering Tests	>>															3Q																
JEM																																
BLK I Milestone A Decision								3Q																								

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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>					PROJECT <b>CA4</b>

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JEM (Cont)																																
BLK I Independent Model Analysis (CB3-TBNM)									1Q	2Q																						
Component Advanced Development (CAD) Review (CB3-TBNM)									3Q																							
BLK I Storyboard Development (CB3-TBNM)									3Q	—	1Q																					
Final Test Evaluation Master Plan (TEMP)												1Q																				
BLK I Milestone B Decision													2Q																			
BLK I Award System Development and Demonstration (SDD) Contract													2Q																			
BLK I Software Development (Engineering builds)													2Q	—	4Q																	
BLK I Early Operational Assessment (EOA)														4Q																		
BLK I Software Development (Block I Formal)														4Q	—	3Q																
BLK I Developmental Testing																2Q																
BLK I Operational Assessment (OA)																2Q																
BLK I Milestone C Decision																3Q																

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>					PROJECT <b>CA4</b>	

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JEM (Cont)																																
BLK I Technical Evaluation (TECHEVAL)																			4Q													
BLK I Operational Testing (OT)																			1Q													
BLK I Initial Operational Capability (IOC)																			2Q													
MCAD																																
Conduct agent and interference trials											2Q	3Q																				
Conduct urban interference trials												3Q	4Q																			
NBCRSBLKI																																
Fox Trainer Hardware Fabrication and Procurement, Fort Polk Systems											3Q	<del>3Q</del>																				
Fox Trainer Software Development, Fort Polk Systems											4Q	<del>3Q</del>																				
Fox Trainer Installation at Fort Polk												3Q																				
Fox Trainer System Engineering Study												2Q	3Q																			
Operational Assessment 2 (OA II)												3Q																				

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT CA4		
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ARTEMIS													
HW S - Early Prototype - Development	C/CPFF	TBS	C	0	0	NONE	0	NONE	3480	Oct-02	2678	6158	6158
SW S - Early Prototype - Development	C/CPFF	TBS	C	0	0	NONE	0	NONE	1500	Oct-02	1887	3387	3387
SW SB - Multiwave LIDAR - Component Advanced Development Task	MIPR	SBCCOM, APG, MD	U	0	0	NONE	1235	Oct-01	0	NONE	0	1235	1235
HW S - Early Prototype - System Integration	C/CPFF	TBS	C	0	0	NONE	0	NONE	500	Oct-02	2200	2700	2700
HW SB - Multiwave LIDAR - Component Advanced Development Task	MIPR	SBCCOM, APG, MD	U	0	0	NONE	1930	Oct-01	0	NONE	0	1930	1930
CBMS													
HW S - CBMS - Initiate and Upgrade CBMS Block II for Fixed Site and Stand Alone Application	C/CPFF	Oak Ridge National Lab, Oak Ridge, TN (OSC, Pomona, CA - sub)	C	0	1226	Oct-01	0	NONE	0	NONE	0	1226	0
JEM													
SW S - Engineering Builds - Prototyping, Design and Code	C/CPIF	TBS	C	0	0	NONE	0	NONE	3015	Jan-03	5000	8015	8015
SW GFPR - HPAC, VLSTRACK & D2PC Source Code/Development Environment - SPAWARSSYSCOM	MIPR	Various	U	0	0	NONE	0	NONE	60	Oct-02	0	60	60
Project CA4													

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**CBDP PROJECT COST ANALYSIS (R-3 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/****BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**CA4**

I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
NBCRSBLKI													
SW SB - Fabricate/Integrate NBCRS Fox Training Systems	SS/CPFF	ITT Industries, Alexandria, VA	C	3138	3423	Mar-01	946	Mar-02	0	NONE	0	7507	0
SW SB - Install NBCRS Fox Training Systems	C/CPFF	ITT Industries, Alexandria, VA	C	200	200	Mar-01	200	Mar-02	0	NONE	0	600	0
Subtotal I. Product Development:				3338	4849		4311		8555		11765	32818	

Remarks: NBCRSBLKI - Training systems at Ft. Polk, LA. FY02 Training Systems planned for Korea.

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2002		
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT CA4		
II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ARTEMIS													
ES S - IPT - Joint Test and Evaluation Plan	MIPR	Various	U	0	0	NONE	615	Oct-01	380	Oct-02	2400	3395	3395
ES S - IPT - Test Support	MIPR	DPG, Dugway, UT	U	0	0	NONE	350	Oct-01	100	Oct-02	950	1400	1400
ES S - IPT - Test Methodology	C/CPFF	Battelle, Arlington, VA	N	0	0	NONE	300	Oct-01	125	Oct-02	395	820	820
ILS S - IPT - Product Support	MIPR	Various	U	0	0	NONE	188	Oct-01	157	Oct-02	1500	1845	1845
ILS S - IPT - Product Support	C/CPFF	Battelle, Arlington, VA	N	0	0	NONE	258	Oct-01	112	Oct-02	900	1270	1270
ES S - Early Prototype - Simulation Support Plan	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	750	Oct-01	0	NONE	200	950	950
ES S - IPT - Systems Engineering	MIPR	Various	U	0	0	NONE	690	Oct-01	450	Oct-02	1688	2828	2828
ES S - IPT - Systems Engineering Support	C/CPFF	Battelle, Arlington, VA	N	0	0	NONE	300	Oct-01	150	Oct-02	563	1013	1013
TD/D S - Early Prototype - Drawings	C/CPFF	TBS	C	0	0	NONE	0	NONE	150	Oct-02	450	600	600
ES S - IPT - Test Strategy Development Support	C/CPFF	Battelle, Arlington, VA	N	0	0	NONE	86	Oct-01	0	NONE	0	86	86
ES S - MNA - Engineering Support	MIPR	Various	U	0	56	Aug-01	112	Oct-01	0	NONE	0	168	112
ES SB - Sample Identification Unit In-service Engineering	C/CPFF	TBS	C	0	0	NONE	0	NONE	425	Oct-02	0	425	425
ES S - AoA - Report	C/CPFF	Battelle, Arlington, VA	N	0	1235	Dec-00	0	NONE	0	NONE	0	1235	0
ES S - IPT - AoA Oversight	MIPR	Various	U	0	267	Dec-00	0	NONE	0	NONE	0	267	0
ES S - MNA - Report	C/CPFF	Battelle, Arlington, VA	N	0	402	Aug-01	0	NONE	0	NONE	0	402	0
Project CA4													



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CA4</b>		
II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CBMS													
ES S - CBMS - Contract Engineering Support	C/CPFF	Oak Ridge National Lab, Oak Ridge, TN (OSC, Pomona, CA - sub)	C	0	293	Oct-01	0	NONE	0	NONE	0	293	0
JEM													
ES S - IPT - Joint Test & Evaluation Planning	MIPR	Various	U	0	0	NONE	0	NONE	578	Oct-02	3148	3726	3726
ES S - IPT - Warfighter Storyboard Development	MIPR	Various	U	0	0	NONE	0	NONE	241	Oct-02	240	481	481
ES S - IPT - C4I/Data Interoperability Planning	MIPR	Various	U	0	0	NONE	0	NONE	246	Oct-02	492	738	738
ILS S - IPT - Product Support Planning	MIPR	Various	U	0	0	NONE	0	NONE	240	Oct-02	480	720	720
ES S - IPT - Prediction Model Reuse Analysis	MIPR	Various	U	0	0	NONE	0	NONE	240	Oct-02	480	720	720
ES S - IPT - System Integration	WR	HQ AMC, Alexandria, VA	U	0	0	NONE	0	NONE	640	Oct-02	900	1540	1540
Subtotal II. Support Costs:				0	2253		3649		4234		14786	24922	
Remarks:													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2002		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CA4</b>		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ARTEMIS													
OTHT SB - Multiwave LIDAR - Demonstrate Component Advance Development Tasks	MIPR	SBCCOM, APG, MD	U	0	0	NONE	500	Oct-01	0	NONE	0	500	500
DTE S - Early Prototype - Purchase Additional Ground Equipment	MIPR	DPG, Dugway, UT	U	0	0	NONE	0	NONE	1650	Oct-02	0	1650	1650
DTE S - Early Prototype - Developmental Testing	C/CPFF	TBS	C	0	0	NONE	0	NONE	500	Oct-02	1250	1750	1750
CBMS													
DTE S - CBMS - Conduct Environmental Testing to Verify Stand Alone Performance	C/CPFF	Oak Ridge National Lab, Oak Ridge, TN (OSC, Pomona, CA - sub)	C	0	250	Oct-00	0	NONE	0	NONE	0	250	0
MCAD													
OTHT S - Agent and Interference Trials	SS/FP	Northrop/Grumann, VA	C	0	0	NONE	100	2Q FY02	0	NONE	0	100	0
OTHT S - Urban area operation testing	MIPR	PM NBCDS, SBCCOM, APG, MD	C	0	0	NONE	1750	3Q FY02	0	NONE	0	1750	0
OTHT S - Test Support	MIPR	PM NBCDS, SBCCOM, APG, MD	U	0	0	NONE	150	2Q FY02	0	NONE	0	150	0
OTHT S - Interference and capability testing in various scenarios	PO	PM NBCDS, SBCCOM, APG, MD	U	0	0	NONE	4000	4Q FY02	0	NONE	0	4000	0
<div>Project CA4</div> <div>Page 31 of 112 Pages</div> <div>Exhibit R-3 (PE 0603884BP)</div>													

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
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III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
NBCRSBLK1													
TD/D C - Analysis to Integrate JS Air/Ground Requirements and Insert Block I Glove Data.	SS/CPFF	ITT Industries, Alexandria, VA	C	100	100	Mar-01	100	Mar-02	0	NONE	0	300	200
Subtotal III. Test and Evaluation:				100	350		6600		2150		1250	10450	
Remarks: NBCRSBLK1 (Training System) - Testing includes software validation, a Limited User Test, and a maintenance evaluation. Trainers are designed and tested uniquely for each installation. This includes systems integration with the Close Combat Tactical Training Center.													

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BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT CA4		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ARTEMIS													
PM/MS S - Program Office - Planning & Programming	WR	NSWCDD, Dahlgren, VA	U	0	618	Oct-00	583	Oct-01	793	Oct-02	7200	9194	8576
PM/MS S - Program Office - Program Support	C/CPFF	Battelle, Arlington, VA	N	0	270	Oct-00	472	Oct-01	918	Oct-02	8100	9760	9545
PM/MS S - IPT - Management	MIPR	Various	U	0	0	NONE	107	Oct-01	99	Oct-02	500	706	706
CBMS													
PM/MS C - Program Management	Various	Oak Ridge National Lab, Oak Ridge, TN (OSC, Pomona, CA - sub)	U	0	154	Oct-00	0	NONE	0	NONE	0	154	0
JEM													
PM/MS S - Program Office - Planning & Programming	WR	SPAWARSYSCOM, San Diego, CA	U	0	150	Sep-01	0	NONE	214	Oct-02	480	844	720
PM/MS S - - Program Support	C/CPFF	Battelle, Arlington, VA	N	0	50	Sep-01	0	NONE	0	NONE	0	50	0
PM/MS S - Program Support	C/CPFF	SAIC, San Diego, CA		0	50	Sep-01	0	NONE	0	NONE	0	50	0
MCAD													
PM/MS S - MCAD Evaluation	MIPR	PM NBCDS, SBCCOM, APG, MD	U	0	0	NONE	154	3Q FY02	0	NONE	0	154	0
NBCRSBLKI													
PM/MS S - Conduct Program/Project Management	PO	PM NBCDS, APG, MD & Fort Monmouth, NJ	U	122	122	Oct-00	122	Oct-01	0	NONE	0	366	122
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	276	2Q FY02	0	NONE	0	276	0
<div>Project CA4</div> <div>Page 33 of 112 Pages</div> <div>Exhibit R-3 (PE 0603884BP)</div>													

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CA4</b>		
IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal IV. Management Services:				122	1414		1714		2024		16280	21554	
Remarks:													
TOTAL PROJECT COST:				3560	8866		16274		16963		44081	89744	

Project CA4
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Exhibit R-3 (PE 0603884BP)

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>CO4</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CO4 COLLECTIVE PROTECTION (DEMVAL)	1454	0	4390	0	0	0	0	0	5844

**A. Mission Description and Budget Item Justification:**

**Project CO4 COLLECTIVE PROTECTION (DEMVAL):** This DEMVAL funding supports Component Advanced Development and System Integration (CAD/SI) of CB collective protection systems that are smaller, lighter, less costly and more easily supported logistically at the crew, unit, ship, and aircraft level.

The Joint Transportable Collective Protection System (JTCOPS) will use the latest technologies to provide the next generation of lightweight, modular, and self-supporting collective protection shelter systems. JTCOPS Block I will backfit selected existing standard military tent systems with a collective protection capability beyond that which is currently available. JTCOPS Block II will fully integrate next-generation collective protection into future military tent systems to provide NBC protection that is integral to the system.

**FY 2001 Accomplishments:**

- 1454 JTCOPS - Revised the acquisition strategy to a block approach to align the program with user priorities. Revised the Milestone B documentation and the development contract request for proposals (RFP) for Block I.

**Total** 1454

**FY 2002 Planned Program: No planned program**

Project CO4
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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																										
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>CO4</b>																																									
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 4390 JTCOPS - Conduct Milestone B Decision Review for Block I. Release a Request for Proposals, evaluate proposals and award a development contract for Block I. Begin the design phase of the contract.</li> </ul> <p><b>Total</b>      4390</p>																																																	
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 8%;"><u>FY 2001</u></th> <th style="width: 8%;"><u>FY 2002</u></th> <th style="width: 8%;"><u>FY 2003</u></th> <th style="width: 8%;"><u>FY 2004</u></th> <th style="width: 8%;"><u>FY 2005</u></th> <th style="width: 8%;"><u>FY 2006</u></th> <th style="width: 8%;"><u>FY 2007</u></th> <th style="width: 8%;"><u>To Compl</u></th> <th style="width: 8%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>CO5 COLLECTIVE PROTECTION (EMD)</td> <td style="text-align: center;">3137</td> <td style="text-align: center;">3987</td> <td style="text-align: center;">4301</td> <td style="text-align: center;">8122</td> <td style="text-align: center;">6690</td> <td style="text-align: center;">4239</td> <td style="text-align: center;">4718</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT</td> <td style="text-align: center;">1038</td> <td style="text-align: center;">2378</td> <td style="text-align: center;">1377</td> <td style="text-align: center;">1927</td> <td style="text-align: center;">2235</td> <td style="text-align: center;">2095</td> <td style="text-align: center;">1846</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>JN0022 JT TRANSPORTABLE COLLECTIVE PROTECTION SHELTER</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">2020</td> <td style="text-align: center;">1995</td> <td style="text-align: center;">1995</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	CO5 COLLECTIVE PROTECTION (EMD)	3137	3987	4301	8122	6690	4239	4718	Cont	Cont	JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT	1038	2378	1377	1927	2235	2095	1846	Cont	Cont	JN0022 JT TRANSPORTABLE COLLECTIVE PROTECTION SHELTER	0	0	0	0	2020	1995	1995	Cont	Cont
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																																								
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JN0022 JT TRANSPORTABLE COLLECTIVE PROTECTION SHELTER	0	0	0	0	2020	1995	1995	Cont	Cont																																								
<b>C. <u>Acquisition Strategy:</u></b> <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 15%; vertical-align: top; padding: 5px;">JTCOPS</td> <td style="padding: 5px;">           Block I will develop a new collective protection capability for existing DoD shelters. A competitive contract will be awarded for the design and prototype fabrication phase, with options for Low Rate Initial Production (LRIP) and production. After successful completion of Development Testing and the Milestone C decision, the LRIP option will be exercised to obtain prototypes for Operational Testing (OT). After completion of OT and the Full Rate Production decision, the production option on the contract will be exercised. Block II is scheduled to begin in FY05.         </td> </tr> </table>										JTCOPS	Block I will develop a new collective protection capability for existing DoD shelters. A competitive contract will be awarded for the design and prototype fabrication phase, with options for Low Rate Initial Production (LRIP) and production. After successful completion of Development Testing and the Milestone C decision, the LRIP option will be exercised to obtain prototypes for Operational Testing (OT). After completion of OT and the Full Rate Production decision, the production option on the contract will be exercised. Block II is scheduled to begin in FY05.																																						
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<div style="display: flex; justify-content: space-between;"> <span>Project CO4</span> <span>Page 36 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>																																																	

# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA4 - Demonstration and Validation

PE NUMBER AND TITLE

0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)

PROJECT

CO4

**D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JTCOPS																																
Conduct Planning Efforts for Milestone B					1Q																											
Milestone B - Block I													2Q																			
Design and Fabricate Prototypes for Development Test (DT) - Block I													3Q																			



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CO4</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JTCOPS													
HW S - Block I System Design and Test Item Fabrication with Options for LRIP and Production	C/CPFF	TBS	C	0	0	NONE	0	NONE	3200	1Q FY03	0	3200	0
Subtotal I. Product Development:				0	0		0		3200		0	3200	
Remarks:													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAl)						PROJECT CO4		
II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JTCOPS													
ES S - Block I Proposal Evaluations and Design Reviews	MIPR	See remarks	U	0	0	NONE	0	NONE	300	1Q FY03	0	300	0
ILS S - Block I ILS Management Activities	MIPR	SBCCOM - Rock Island, IL	U	0	40	1Q FY01	0	NONE	300	1Q FY03	0	340	0
TD/D S - Block I Integrated Logistic Support Data	C/CPFF	TBS	C	0	0	NONE	0	NONE	100	1Q FY03	0	100	0
Subtotal II. Support Costs:				0	40		0		700		0	740	
Remarks: JTCOPS - Performing Activities & Locations: SBCCOM - Natick, MA; SBCCOM - Edgewood, MD; Brooks AFB - San Antonio, TX; NSWCDD - Dahlgren, VA; MARCORSYSCOM - Quantico, VA; CECOM - Ft. Belvoir, VA													
III. Test and Evaluation: Not applicable													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)					PROJECT CO4			
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JTCOPS													
PM/MS S - Block I Overall Program Management and Integrated Product Team Chair Responsibilities	Allot	SBCCOM - Natick, MA	U	0	470	1Q FY01	0	NONE	200	1Q FY03	0	670	0
PM/MS SB - Block I Integrated Product Team Participation	PO	See Remarks	U	0	944	1Q FY01	0	NONE	290	1Q FY03	0	1234	0
Subtotal IV. Management Services:				0	1414		0		490		0	1904	
Remarks: JTCOPS - Performing Activities & Locations: SBCCOM - Edgewood, MD; Brooks AFB - San Antonio, TX; NSWCDD - Dahlgren, VA; MARCORSYSCOM - Quantico, VA													
TOTAL PROJECT COST:					0	1454		0		4390		0	5844
<div>Project CO4</div> <div>Page 40 of 112 Pages</div> <div>Exhibit R-3 (PE 0603884BP)</div>													

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COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL)	15709	15243	13423	20442	21137	24459	25516	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CP4 COUNTERPROLIFERATION SUPPORT (DEMVAL):** Providing full dimensional protection to deployed forces and critical fixed sites, to include Aerial Ports of Debarkation (APODs) and Sea Ports of Debarkation (SPODs), under threat of chemical or biological attack is one of the highest Commanders-in-Chief (CINC) priorities. Joint Vision 2010 states that power projection from the U.S. - achieved through rapid strategic mobility and enabled by overseas presence - will likely remain the fundamental concept of our future force. Fixed installations (seaports, aerial ports, logistics nodes, etc.) are critical to this mode of operation and are especially vulnerable to attack with Chemical and Biological (CB) weapons. Future adversaries will likely use CB weapons to deny U.S. and Allied use of these facilities. U.S. forces, both mobile and at fixed sites, must be able to survive CB attacks and quickly recover to continue operations. This project supports the accelerated fielding of operational capabilities (technology, Concept of Operations (CONOPS), and automation tools) to CINCs through the Advanced Concept Technology Demonstration (ACTD) process.

The Joint Biological Remote Early Warning System (JBREWS) ACTD, completed in FY01, attempted to address the need for an early warning, detection and identification of Biological Warfare (BW) agents in assembly areas. The primary requirement of the sponsoring CINC was to have an interim residual capability to detect, identify, and warn forces who may be exposed to BW agents. The JBREWS ACTD Military Utility Assessment was conducted by USEUCOM in September 2000. The JBREWS components did not demonstrate sufficient maturity and reliability to justify residual status. Technologies and detection strategies were transitioned to other biological detection systems in development and acquisition.

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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CP4</b>
<p>The Restoration of Operations (RestOps) ACTD investigates the impact of technology and CONOPS on restoring operating tempo at an airfield following a CB attack. RestOps are those pre/during/post attack actions necessary to protect against and then immediately react to the consequences of a CB attack on an airfield so that the facility can resume functioning with a minimum of down time. This ACTD will provide technology, software support, and techniques and procedures so that an air base commander can minimize the impact of a CB attack on military operations.</p> <p>The Contamination Avoidance at Sea Ports of Debarkation (CASPOD) ACTD provides technologies, tools, tactics and procedures for the recovery of throughput operations after a chemical or biological attack at a seaport during times of a major logistics operation.</p> <p>The Joint Multi-Mission Advanced NBC system (JMANS) program, also an ACTD candidate for FY01 which was not approved, was to provide Joint Task Force Commanders with an early entry NBC detection, warning and reporting capability.</p>		
Project CP4	Page 42 of 112 Pages	Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CP4</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 407 JBREWS ACTD - Conducted in-service engineering for product improvement of the JBREWS Sample Identification Unit (SIU), power systems, and C4I, and support with modeling.</li> <li>• 724 JBREWS ACTD - Provided operational and training SIU assay cartridges for the Operational Testing Period.</li> <li>• 1927 JMANS - Initiated multi-mission sensor field trials to demonstrate CB detection capabilities with radar systems.</li> <li>• 3400 RestOps ACTD - Completed Joint Chemical Field Trials (development tests) and technology assessments on RestOps selected technologies at Dugway Proving Ground.</li> <li>• 1400 RestOps ACTD - Conducted CONOPS validation for future use in the RestOps preliminary and final demonstrations.</li> <li>• 1871 RestOps ACTD - Began procurement on selected decontamination, detection, protection, medical countermeasures, and sensor integration equipment/systems for the RestOps limited utility assessments, preliminary, and final demonstrations.</li> <li>• 2218 RestOps ACTD - Conducted the RestOps Air Base baseline exercise.</li> <li>• 1443 RestOps ACTD - Conducted user Operational/Functional Testing for Limited Utility Assessment (LUA) of the RestOps selected technologies satisfactorily making it through the Joint Chemical Field Trials at Dugway Proving Ground.</li> <li>• 2319 RestOps ACTD - Continued technology selection support, initiate procurement activity support, begin policy initiatives, continue information technology integration efforts and initiate planning for the RestOps technology transition.</li> </ul>		
<b>Total</b>	15709	
<div> <div>Project CP4</div> <div>Page 43 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CP4</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 550 RestOps ACTD - Initiate user training on new technologies in preparation for RestOps preparatory and final demonstrations.</li> <li>• 620 RestOps ACTD - Conduct user preliminary demonstrations at RestOps Operational Manager selected Air Bases.</li> <li>• 610 RestOps ACTD - Complete procurement of selected technologies for decontamination, detection, protection, medical countermeasures, and sensor integration hardware and software.</li> <li>• 4980 RestOps ACTD - Continue procurement support, policy initiatives, transition planning, and information technology integration support.</li> <li>• 2725 RestOps ACTD - Conduct technology systems integration and systems tests, final CONOPS evaluation, and complete Limited Utility Assessment reports.</li> <li>• 1833 CASPOD ACTD - Develop the Management Plan, management structure, and methodologies for technology selection analysis, chemical field-test assessment, and operational capability assessment for use during CASPOD. Begin procurement on selected decontamination, detection, protection, medical countermeasures and sensor integration equipment/systems for the CASPOD limited utility assessments, preliminary and final demonstrations. And Conduct technology selection support, initiate procurement activity support, begin policy initiatives, continue information technology integration efforts and initiate planning for the CASPOD technology transition.</li> <li>• 1833 CASPOD ACTD - Develop site chemical and biological exercise scenario in preparation for the CASPOD baselining exercise. Conduct scenario and evaluation development for use in the CASPOD baselining exercise, preliminary and final demonstrations. Conduct CONOPS validation for future use in the CASPOD preliminary and final demonstrations. Conduct a series of tabletop exercises to establish the CASPOD baseline.</li> </ul>		
Project CP4	Page 44 of 112 Pages	Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CP4</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 1834 CASPOD ACTD - Conduct user operational/functional testing for limited utility assessments (LUA) of the CASPOD selected technologies satisfactorily making it through the Joint Chemical Field Trials at Dugway Proving Ground.</li> <li>• 258 SBIR - Small Business Innovative Research.</li> </ul> <b>Total</b> 15243		
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 959 CASPOD - Conduct user preliminary demonstration at CASPOD Operational Manager selected seaports.</li> <li>• 959 CASPOD - Conduct the CASPOD final user demonstration on new technologies taking it through the preliminary demonstration.</li> <li>• 959 CASPOD - Complete procurement of selected technologies for decontamination, detection, protection, medical countermeasures, and sensor integration hardware and software.</li> <li>• 959 CASPOD - Continue procurement support, policy initiatives, transition planning, and information technology integration support.</li> <li>• 959 CASPOD - Conduct technology systems integration and systems tests, final CONOPs evaluation, and complete Limited Utility Assessment reports.</li> <li>• 958 CASPOD - Initiate user training on new technologies in preparation for preliminary and final demonstrations. Complete user training for final demonstrations at the OM selected seaports.</li> <li>• 550 RestOps ACTD - Complete user training for final demonstrations at the Operational Manager selected airbases.</li> </ul>		
Project CP4	Page 45 of 112 Pages	Exhibit R-2 (PE 0603884BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>CP4</b>
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 2100 RestOps ACTD - Conduct the RestOps final user demonstration on new technologies taking it through the preliminary demonstration.</li> <li>• 2603 RestOps ACTD - Initiate planning, procurement, and contractor logistics support services for residual support on Operational Manager selected technologies.</li> <li>• 1500 RestOps ACTD - Finalize policy initiatives and complete information technology integration.</li> <li>• 917 RestOps ACTD - Develop and complete Military Utility Assessment (MUA) report and complete CONOPS documents.</li> </ul>		
<b>Total</b>	13423	
<div> <div>Project CP4</div> <div>Page 46 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																																																								
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>CP4</b>																																																																							
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 7.5%;"><u>FY 2001</u></th> <th style="width: 7.5%;"><u>FY 2002</u></th> <th style="width: 7.5%;"><u>FY 2003</u></th> <th style="width: 7.5%;"><u>FY 2004</u></th> <th style="width: 7.5%;"><u>FY 2005</u></th> <th style="width: 7.5%;"><u>FY 2006</u></th> <th style="width: 7.5%;"><u>FY 2007</u></th> <th style="width: 7.5%;"><u>To Compl</u></th> <th style="width: 7.5%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>BJ4 BIOLOGICAL DEFENSE (DEMVAL)</td> <td style="text-align: center;">5765</td> <td style="text-align: center;">1560</td> <td style="text-align: center;">3661</td> <td style="text-align: center;">19163</td> <td style="text-align: center;">19329</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">49478</td> </tr> <tr> <td>BJ5 BIOLOGICAL DEFENSE (EMD)</td> <td style="text-align: center;">7575</td> <td style="text-align: center;">12803</td> <td style="text-align: center;">14660</td> <td style="text-align: center;">17977</td> <td style="text-align: center;">17315</td> <td style="text-align: center;">37632</td> <td style="text-align: center;">35708</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)</td> <td style="text-align: center;">9944</td> <td style="text-align: center;">12492</td> <td style="text-align: center;">11738</td> <td style="text-align: center;">5327</td> <td style="text-align: center;">5368</td> <td style="text-align: center;">4697</td> <td style="text-align: center;">4242</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>CP5 COUNTERPROLIFERATION SUPPORT (EMD)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td>JPO210 CRITICAL REAGENTS PROGRAM (CRP)</td> <td style="text-align: center;">4284</td> <td style="text-align: center;">1913</td> <td style="text-align: center;">2010</td> <td style="text-align: center;">1850</td> <td style="text-align: center;">1894</td> <td style="text-align: center;">2251</td> <td style="text-align: center;">2301</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>JPO230 PORTAL SHIELD EQUIPMENT</td> <td style="text-align: center;">26192</td> <td style="text-align: center;">3865</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">30057</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	BJ4 BIOLOGICAL DEFENSE (DEMVAL)	5765	1560	3661	19163	19329	0	0	0	49478	BJ5 BIOLOGICAL DEFENSE (EMD)	7575	12803	14660	17977	17315	37632	35708	Cont	Cont	CP3 COUNTERPROLIFERATION SUPPORT (ADV TECH DEV)	9944	12492	11738	5327	5368	4697	4242	Cont	Cont	CP5 COUNTERPROLIFERATION SUPPORT (EMD)	0	0	0	0	0	0	0	0	0	JPO210 CRITICAL REAGENTS PROGRAM (CRP)	4284	1913	2010	1850	1894	2251	2301	Cont	Cont	JPO230 PORTAL SHIELD EQUIPMENT	26192	3865	0	0	0	0	0	0	30057
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																																																																						
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JPO230 PORTAL SHIELD EQUIPMENT	26192	3865	0	0	0	0	0	0	30057																																																																						
<b>C. <u>Acquisition Strategy:</u></b> <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 15%; vertical-align: top;">ACTDs</td> <td>Utilize non-traditional acquisition Advanced Concept Technology Demonstration (ACTD) to rapidly provide the CINC with operational capabilities to counter the battlefield effects of chemical and biological attacks, to include the development of concepts of operation and doctrine.</td> </tr> <tr> <td style="vertical-align: top;">ARTEMIS</td> <td>Moved to Contamination Avoidance.</td> </tr> </table>										ACTDs	Utilize non-traditional acquisition Advanced Concept Technology Demonstration (ACTD) to rapidly provide the CINC with operational capabilities to counter the battlefield effects of chemical and biological attacks, to include the development of concepts of operation and doctrine.	ARTEMIS	Moved to Contamination Avoidance.																																																																		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>					PROJECT <b>CP4</b>	

<b>D. <u>Schedule Profile:</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARTEMIS																																
Concept Exploration	>>								1Q																							
Analysis of Alternatives		2Q						4Q																								
Milestone Component Advanced Development (CAD)									1Q																							
Milestone C Low Rate Initial Production (LRIP)									1Q																							
Component Advanced Development									1Q			4Q																				
BLK I - Release Draft Request for Proposal (RFP)											3Q																					
BLK I - Milestone B Decision													1Q																			
BLK I - Release Request for Proposal (RFP)													1Q			3Q																
BLK I - Award Contract (Prototype)															3Q																	
BLK I - Prototype Hardware/Software Development														3Q														3Q				
BLK I - System Requirements Review (SRR)																	1Q															
BLK I - Integrated Baseline Review (IBR)																	1Q															

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARTEMIS (Cont)																																
BLK I - System Function Requirements (SFR)																3Q																
BLK I - Early Prototypes Delivered																	3Q															
BLK I - Prototype Developmental Testing (DT I)																	3Q	4Q														
BLK I - Early Operational Assessment																				1Q												
BLK I - Advanced Prototypes Delivered																					2Q											
BLK I - Prototype Developmental Testing (DT II)																					2Q											
BLK I - Operational Assessment (OA)																					3Q											
Developmental Test I (DT I) LAV variant																													2Q			
BLK I - Award Low Rate Initial Production (LRIP) Contract / Option																													2Q			
INTCBATD																																
Scenario/Exercise Development												4Q																				
Joint Chemical Fields Trials												3Q																				
Concept of Operations (CONOPS) Development												4Q																				

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INTCBATD (Cont)																																
Concept of Operations (CONOPS) Validation													1Q	2Q																		
Baseline Exercise											3Q																					
Procurement											3Q				4Q																	
Training													2Q				2Q															
Preliminary Demonstration														4Q																		
Joint Warfighting Experiment (JWE)/Final Demonstration																4Q																
JBREWS																																
Conduct JBREWS Advanced Concept Technology Demonstration (ACTD) Demonstration				4Q	1Q																											
JMANS																																
Advanced Concept Technology Demonstration (ACTD) Development					1Q			4Q																								
Conduct Radar Multimission Sensor Field Trials								3Q	4Q																							
RESTOPS																																
Scenario/Exercise Development		2Q								2Q																						

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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**CP4****D. Schedule Profile (cont):**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
RESTOPS (Cont)																																
Joint Chemical Field Trials			3Q				1Q																									
Concept of Operations (CONOPS) Development									1Q																							
Concept of Operations (CONOPS) Validation							1Q	2Q																								
Functional Test							2Q				2Q																					
Baseline Exercise							2Q																									
Procurement							3Q			1Q																						
Training									2Q			1Q																				
Osan AB Demonstration Vignette									3Q																							
DPG Decon Demonstration Vignette									3Q																							
DPG Medical Demonstration Vignette										4Q																						
Joint Warfighting Experiment (JWE)/Final Demonstration													2Q																			
Fielding Support (CLS)													2Q				4Q															

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CP4</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
INTCBATD													
HW S - Procure CASPOD Technologies	PO	Army-Soldier Biological Chemical Command, APG, MD	U	0	0	NONE	0	NONE	1900	1Q FY03	0	1900	0
RESTOPS													
HW S - Procure RESTOPS Technologies	MIPR	Army- Soldier Biological Chemical Command, APG, MD	U	0	1871	Oct-00	610	Oct-01	0	NONE	0	2481	0
HW S - Procure CASPOD Technologies	MIPR	Army- Soldier Biological Chemical Command, APG, MD	U	0	0	NONE	238	1Q FY02	0	NONE	0	238	0
Subtotal I. Product Development:				0	1871		848		1900		0	4619	
Remarks:													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CP4</b>		
II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
INTCBATD													
ILS S - Training for Preliminary and Final Demonstrations	Allot	Army - US Army Chemical School, Ft Leonard Wood, MO	U	0	0	NONE	0	NONE	250	1Q FY03	0	250	0
JBREWS													
ES SB - Sample Identification Unit Inservice Engineering	MIPR	NSWC, Dahlgren, VA	U	0	407	1Q FY01	0	NONE	0	NONE	0	407	0
JMANS													
TD/D SB - JMANS CONOPS Development	SS/CPFF	SOBRAN, Edgewood, MD	C	0	100	2Q FY01	0	NONE	0	NONE	0	100	0
ES S - JMANS CONOPS Development	MIPR	NSWC, Dahlgren, VA	U	0	180	1Q FY02	0	NONE	0	NONE	0	180	0
ES SB - JMANS CONOPS Development	MIPR	CECOM, Ft. Monmouth, NJ	U	0	150	1Q FY02	0	NONE	0	NONE	0	150	0
RESTOPS													
ILS S - Training for Preliminary and Final Demonstrations	Allot	Army - US Army Chemical School, Ft Leonard Wood, MO	U	0	0	NONE	550	Oct-01	550	Oct-02	0	1100	0
ILS S - Residual Support	Allot	Army - Soldier Biological Chemical Command, APG. MD	U	0	0	NONE	0	NONE	2603	Oct-02	0	2603	0
ES S - Systems Integration and Integration Testing	Allot	Army - Soldier Biological Chemical Command, APG, MD	U	0	0	NONE	1667	Oct-01	0	NONE	0	1667	0
Project CP4													



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
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II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
TD/D S - Military Utility Assessment Report and CONOPS Documents	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	0	NONE	0	NONE	917	Oct-02	0	917	0
Subtotal II. Support Costs:				0	837		2217		4320		0	7374	
Remarks:													
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
INTCBATD													
OTHT SB - Complete Tests on Selected Technologies in Joint Chemical Field Trials	MIPR	Army-Dugway Proving Ground, Dugway, Utah	U	0	0	NONE	0	NONE	1000	1Q FY03	0	1000	0
OTHT S - Conduct Operational and Functional Tests During Limited Utility Tests	PO	Air Force - AF Operational Test Center, Albuquerque, NM		0	0	NONE	0	NONE	339	1Q FY03	0	339	0
OTHT SB - Conduct CASPOD Chemical Biological Defense Concepts of Operations Validation	MIPR	US Central Command, MacDill AFB, Tampa, FL	U	0	0	NONE	0	NONE	250	1Q FY03	0	250	0
OTHT SB - Conduct Preliminary Demonstration at Blount Is, FL and Final Demonstration at Mina Sulma, Bahrain	PO	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	0	NONE	0	NONE	1500	1Q FY03	0	1500	0
<div style="display: flex; justify-content: space-between;"> <span>Project CP4</span> <span>Page 54 of 112 Pages</span> <span>Exhibit R-3 (PE 0603884BP)</span> </div>													

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE  
February 2002

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

## PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

## PROJECT

**CP4**

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBREWS													
OTE S - Purchase Operational Testing Period Assay Cartridges	C/FFP	ACS Defense Inc., Alexandria, VA	C	0	724	Oct-00	0	NONE	0	NONE	0	724	0
JMANS													
ES S - Contract Support for SDD Phase	MIPR	CECOM, Ft. Monmouth, NJ	U	0	374	2Q FY01	0	NONE	0	NONE	0	374	0
OTHT SB - Field Trials for the Radar Multimission Sensor	SS/CPFF	TAMSCO, Edgewood, MD	C	0	192	2Q FY01	0	NONE	0	NONE	0	192	0
OTHT SB - Field Trials for Radar Multimission Sensor	SS/CPFF	DYCOR, Havre de Grace, MD	C	0	51	2Q FY01	0	NONE	0	NONE	0	51	0
RESTOPS													
OTHT SB - Complete Tests on Selected Technologies in Joint Chemical Field Trials	MIPR	Army- Dugway Proving Ground, Dugway, Utah	U	0	3400	Oct-00	0	NONE	0	NONE	0	3400	0
OTHT S - Conduct Operational and Functional Tests During Limited Utility Tests	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	1443	Oct-00	339	Oct-01	0	NONE	0	1782	0
OTHT S - Conduct Baselineing Exercise on Airbase Operations	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	2218	Oct-00	0	NONE	0	NONE	0	2218	0
OTHT SB - Conduct Airbase Chemical Biological Defense Concepts of Operation Validation	MIPR	Air Force - Pacifica Air Forces, Hickam AF, Hawaii	U	0	1400	Oct-00	250	Oct-01	0	NONE	0	1650	0

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CP4</b>		
III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT SB - Conduct Preliminary and Final Demonstrations at Osan AB, Korea	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	0	NONE	2590	Oct-01	2100	Oct-02	0	4690	0
OTHT SB - Complete Tests on Selected Technologies in Joint Chemical Field Trials	MIPR	Army-Dugway Proving Ground, Dugway, UT	U	0	0	NONE	500	2Q FY02	0	NONE	0	500	0
OTHT S - Conduct Operational and Functional Test During Limited Utility Tests	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	0	NONE	1443	2Q FY02	0	NONE	0	1443	0
OTHT S - Conduct Baselineing Exercise on Seaport Operations	Allot	Air Force - AF Operational Test Center, Albuquerque, NM	U	0	0	NONE	500	2Q FY02	0	NONE	0	500	0
OTHT SB - Conduct CASPOD Chemical Biological Defense Concepts of Operation Validation	MIPR	US Central Command, MacDill AFB, Tampa, FL	U	0	0	NONE	500	2Q FY02	0	NONE	0	500	0
Subtotal III. Test and Evaluation:				0	9802		6122		5189		0	21113	
Remarks:													

## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT CP4		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
INTCBATD													
PM/MS S - Perform Program Management for CASPOD ACTD	C/FP	Defense Group Incorporated, Alexandria, VA	C	0	0	NONE	0	NONE	300	Oct-02	0	300	0
PM/MS S - Perform Program Management for CASPOD	Allot	DTRA, Alexandria, VA	U	0	0	NONE	0	NONE	214	1Q FY03	0	214	0
JMANS													
PM/MS S - JMANS Multiservice Program Administration	PO	SBCCOM, APG, MD	U	0	880	1Q FY01	0	NONE	0	NONE	0	880	0
RESTOPS													
PM/MS S - Perform Program Management for RESTOPS ACTD	C/FP	Defense Group Incorporated, Alexandria, VA	C	0	1625	Oct-00	3000	Oct-01	0	NONE	0	4625	0
PM/MS S - Perform Program Management for RestOps	Allot	DTRA, Alexandria, VA	U	0	694	Oct-00	479	Oct-01	1500	Oct-02	0	2673	0
Advanced LRUs and Breadboard	Allot	Defense Group Incorporated, Alexandria, VA	C	0	0	NONE	1625	1Q FY02	0	NONE	0	1625	0
PM/MS S - Perform Program Management for CASPOD ACTD	Allot	DTRA, Alexandria, VA	U	0	0	NONE	694	2Q FY02	0	NONE	0	694	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	258	2Q FY02	0	NONE	0	258	0
<div>Project CP4</div> <div>Page 57 of 112 Pages</div> <div>Exhibit R-3 (PE 0603884BP)</div>													

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>CP4</b>		
IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal IV. Management Services:				0	3199		6056		2014		0	11269	
Remarks:													
TOTAL PROJECT COST:				0	15709		15243		13423		0	44375	

Project CP4
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>DE4</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
DE4      DECONTAMINATION SYSTEMS (DEMVAL)	3368	6143	6972	12378	14220	3997	3992	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project DE4 DECONTAMINATION SYSTEMS (DEMVAL):** This DEMVAL funding supports Component Advanced Development and System Integration (CAD/SI) of decontamination systems utilizing solutions that will remove and/or detoxify contaminated material without damaging combat equipment, personnel, or the environment. Decontamination systems provide a force restoration capability for units that become contaminated. Development efforts will provide systems with reduced operational impact, reduced logistics burden, reduced costs, increased safety, and minimized environmental effect over currently fielded decontaminants. This funding supports the Joint Service Fixed Site Decontamination (JSFXD) and the Joint Service Sensitive Equipment Decontamination (JSSED) programs.

The JSFXD system consists of a family of decontaminants and family of applicators that provide each service with the capability to decontaminate fixed sites to restore mission operations. These items will be used to decontaminate equipment, personnel, and vital areas to sustain critical cargo flow and operation tempo at ports, airfields, logistic nodes, and key command and control centers. The program is divided into four blocks. Block I will field decontaminants that will be used with integral or existing applicators. Block II will field any additional applicators and containment systems required to provide the full fixed site decontamination capability (excluding Block III). Block III will provide a Food and Drug Administration (FDA) approved capability to decontaminate skin/casualties with open wounds. Block IV will address requirements that have been trade-offs or are currently ill defined, inserting technology as it matures to the point of being cost effective.

Project DE4
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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>DE4</b>

The JSSED system will fill an immediate need to decontaminate chemical and biological warfare agents from sensitive equipment, vehicle/aircraft interiors, and associated cargo, as defined in the draft Joint Service Operational Requirements Document (JSORD) for the JSSED. The JSSED will be a dual technology development program; one technology to decontaminate sensitive items/equipment and a second technology to decontaminate vehicle/aircraft interiors. The JSSED will utilize a three block approach to address individual key capabilities to reduce program risk and support production schedule. Block I will do sensitive equipment/items decontamination; Block II will do aircraft/vehicle interior decontamination; and, Block III will do aircraft/vehicle interior decontamination "on-the-move."

SORBDECON provides a reactive sorbent powder technology and a family of applicators for immediate decontamination. Sorbent replaces the XE555 resin in the M295 Decontamination Kit for wipe down procedures. The sorbent and a dispenser system will replace M11's and M13's used for immediate decontamination, and associated Decontaminating Solution 2 (DS2) in operator spray down procedures. The Sorbent Decon System will be more reactive towards Chemical Warfare (CW) agents than the M295 Kit using XE555 Resin, therefore reducing the hazard associated with the spent decontaminant. The sorbent will be more compatible with Mission Oriented Protective Posture (MOPP) and other materials than the currently fielded DS2. This program completed the RDTE phase in FY2001.

Project DE4

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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>DE4</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 568 JSFXD - Completed performance specifications to support procurement for all blocks and technical documentation (Test Reports and Test Plans) to support a MS B decision for Block I.</li> <li>• 336 JSFXD - Initiated MS B documentation for Block II. Prepared solicitation package Block III.</li> <li>• 976 JSFXD - Initiated test methodology development and initial toxicology testing to support downselect and FDA approval of Block III skin/casualty decontaminants.</li> <li>• 420 JSSED - Completed performance specifications and Request for Proposal to support development contract for Block I.</li> <li>• 379 JSSED - Conducted source selection evaluation board to select Block I candidate systems.</li> <li>• 232 JSSED - Prepared and submitted Block I Milestone documentation, which included Test and Evaluation Master Plan, System Acquisition Master Plan, and Acquisition Program Baseline.</li> <li>• 201 SORBDECON - Completed baseline toxicity testing of sorbent material.</li> <li>• 256 SORBDECON - Completed development and support of Milestone III decision documentation for operator's spray down system on equipment.</li> </ul>		
<b>Total</b>	3368	
<div> <div>Project DE4</div> <div>Page 61 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div> </div>		



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>DE4</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 577 JSFXD - Continue toxicology testing and other evaluations necessary for FDA approval to support downselect of Block III skin/casualty decontaminants.</li> <li>• 1430 JSFXD - Award system integration contract(s) for Block II family of applicators system to develop prototype applicator and containment systems for evaluation (15 systems at average cost of \$100K).</li> <li>• 941 JSFXD - Perform Early Operational Assessment and initiate Developmental Testing (DT) of Block II family of applicator systems.</li> <li>• 2500 JSSED - Award Block I competitive contract to deliver three system models from each of two contractors and investigate design improvements to meet military requirements. (Total of six prototypes at \$150K each).</li> <li>• 591 JSSED - Conduct assessments evaluating performance and procedures in a chemical environment. Conduct assessments of the effectiveness of interior building areas for use as chemical rest and relief areas.</li> <li>• 104 SBIR - Small Business Innovative Research.</li> </ul> <b>Total</b> 6143		
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 248 JSSED - Conduct Block I program Interim Progress Review (IPR) to finalize Block I technology and system design.</li> <li>• 3457 JSSED - Award contract to fabricate Block I developmental test systems which implement design improvements from the prior year competitive prototypes.</li> <li>• 2667 JSSED - Initiate pre-production Block I system test design.</li> </ul>		
Project DE4	Page 62 of 112 Pages	Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																																														
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>DE4</b>																																																													
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 500 JSSED - Prepare and submit Block II/III Milestone B documentation, which includes Test and Evaluation Master Plan, System Acquisition Master Plan, and Acquisition Program Baseline.</li> <li>• 100 JSSED - Prepare Request for Proposal for Block II/III combined development effort.</li> </ul> <p><b>Total</b>            6972</p>																																																																					
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 7.5%;"><u>FY 2001</u></th> <th style="width: 7.5%;"><u>FY 2002</u></th> <th style="width: 7.5%;"><u>FY 2003</u></th> <th style="width: 7.5%;"><u>FY 2004</u></th> <th style="width: 7.5%;"><u>FY 2005</u></th> <th style="width: 7.5%;"><u>FY 2006</u></th> <th style="width: 7.5%;"><u>FY 2007</u></th> <th style="width: 7.5%;"><u>To Compl</u></th> <th style="width: 7.5%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>DE5 DECONTAMINATION SYSTEMS (EMD)</td> <td style="text-align: center;">3746</td> <td style="text-align: center;">2498</td> <td style="text-align: center;">4981</td> <td style="text-align: center;">4925</td> <td style="text-align: center;">897</td> <td style="text-align: center;">4996</td> <td style="text-align: center;">2993</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>G47001 MODULAR DECON SYSTEM</td> <td style="text-align: center;">2450</td> <td style="text-align: center;">4997</td> <td style="text-align: center;">5007</td> <td style="text-align: center;">5098</td> <td style="text-align: center;">4973</td> <td style="text-align: center;">4987</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">27512</td> </tr> <tr> <td>JN0010 JOINT SERVICE FIXED SITE DECON (JSFXD)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1515</td> <td style="text-align: center;">2001</td> <td style="text-align: center;">7508</td> <td style="text-align: center;">6579</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">17603</td> </tr> <tr> <td>JN0016 JOINT SERVICE SENSITIVE EQUIPMENT DECON</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">6074</td> <td style="text-align: center;">12234</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>JN0018 SORBENT DECON</td> <td style="text-align: center;">2726</td> <td style="text-align: center;">8578</td> <td style="text-align: center;">8553</td> <td style="text-align: center;">266</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">20123</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	DE5 DECONTAMINATION SYSTEMS (EMD)	3746	2498	4981	4925	897	4996	2993	Cont	Cont	G47001 MODULAR DECON SYSTEM	2450	4997	5007	5098	4973	4987	0	0	27512	JN0010 JOINT SERVICE FIXED SITE DECON (JSFXD)	0	1515	2001	7508	6579	0	0	0	17603	JN0016 JOINT SERVICE SENSITIVE EQUIPMENT DECON	0	0	0	0	0	6074	12234	Cont	Cont	JN0018 SORBENT DECON	2726	8578	8553	266	0	0	0	0	20123
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																																																												
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JN0016 JOINT SERVICE SENSITIVE EQUIPMENT DECON	0	0	0	0	0	6074	12234	Cont	Cont																																																												
JN0018 SORBENT DECON	2726	8578	8553	266	0	0	0	0	20123																																																												
<div style="display: flex; justify-content: space-between;"> <span>Project DE4</span> <span>Page 63 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>																																																																					

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>DE4</b>
<p><b>C. <u>Acquisition Strategy:</u></b></p> <p>JSFXD                      Block I: competitively procure COTS/NDI decontaminants and where required, integral applicators for government/contractor test with options for production. Block II: competitive contract to develop applicator and containment systems for government/contractor testing with options for production. Block III: competitive procurement of COTS/NDI decontaminants with potential to meet FDA requirements for government testing with options for production. Block IV provides the warfighter with capabilities that were traded off during Blocks I-III, or to meet those requirements that are currently ill defined or underdefined, by inserting technology as it matures to the point of being cost effective.</p> <p>JSSD                        Utilize a three block approach to address individual key capabilities to reduce program risk and support production schedule. Block I: provide for sensitive equipment/items decontamination; Block II: provide for aircraft/vehicle interior decontamination; and, Block III: provide for aircraft/vehicle interior decontamination "on-the-move." Blocks I-III: in-house/contractor development and testing. Competitive contractor manufacture of production units.</p> <p>SORBDECON              In-house/contractor development and testing. Competitive contractor manufacture of production units.</p>		
<p>Project DE4</p> <p>Page 64 of 112 Pages</p> <p>Exhibit R-2 (PE 0603884BP)</p>		

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## CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE  
February 2002

BUDGET ACTIVITY

RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation

PE NUMBER AND TITLE

0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)

PROJECT

DE4

**D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JSFXD																																
Block I - IV In Process Review (IPR)					1Q	2Q																										
Block I Milestone B									2Q																							
Block I Developmental Test (DT)/Operational Test (OT)									2Q	3Q																						
Block I Milestone C													3Q																			
Block II Milestone B													1Q																			
Block II DT/Operational Test (OT) for Family of Applicators													1Q	<div></div>		1Q																
Block II Milestone C																3Q																
Block III Tests for Downselect								3Q	<div></div>				3Q																			
Block III Milestone B												4Q																				
Block III Federal Drug Administration (FDA) Clinical Testing													3Q	<div></div>			2Q															
Block III Developmental Test/ Operational Test (DT/OT)													3Q	<div></div>					4Q													
Block III Milestone C																					1Q											
JSSD																																
Block I Concept Exploration	>>	<div></div>			4Q																											

Project DE4

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# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE  
**February 2002**

BUDGET ACTIVITY

**RDTE&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**






PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**DE4**

## D. Schedule Profile (cont):

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4								
JSSSED (Cont)																																				
Prototype Developmental Testing (DT I)	>>													4Q																						
Block I Milestone B						2Q																														
Block I Competitive Prototype Contract Award										2Q																										
Block I Contract Effort										2Q		4Q																								
Evaluate Candidate Block I Prototypes												4Q	1Q																							
Downselect Block I Prototype													1Q																							
Development of Pre-Production Block I Units													2Q													4Q										
Block I Prototype Developmental Testing (DT)																		1Q					3Q													
Block II/III Milestone B														4Q																						
Block II/III Competitive Prototype Contract																	1Q													4Q						
Block I Milestone C Type Classification																												1Q								
SORBDECON																																				
Engineering, Design, and Test (EDT)/Operational Test (OT)	>>	2Q																																		
Milestone III for M100 SORBDECON							3Q																													

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<b>D. <u>Schedule Profile (cont):</u></b>											
FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007				
1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4			
SORBDECON (Cont)											
M100 SORBDECON Production Contract Award		4Q									
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I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
OTHT SB - Multiwave LIDAR - Demonstrate Component Advance Development Tasks	C/FPI	TBS	C	0	0	NONE	1130	Feb-02	0	NONE	0	1130	0
JSSD													
SW SB - JSSD - Block I Prototype Systems (2 Contractors - 3 Systems Each)	C/CPFF	TBS	C	0	0	NONE	2000	Feb-02	3457	Feb-03	0	5457	0
Subtotal I. Product Development:				0	0		3130		3457		0	6587	
Remarks:													
II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
ES S - Contractor Support for Family of Applicators Block II	C/FFP	SVERDRUP, Woodbridge, VA.	C	0	0	NONE	300	Dec-01	0	NONE	0	300	0
Subtotal II. Support Costs:				0	0		300		0		0	300	
Remarks:													

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
OTHT SB - FDA Evaluation of Skin Decontaminants Blk III	MIPR	USAMMDA, FT DETRICK, MD.	U	0	962	Nov-00	477	Nov-01	0	NONE	0	1439	0
OTHT SB - DT for Family of Applicators Systems Block II	MIPR	TBS	U	0	0	NONE	700	Nov-01	0	NONE	0	700	0
JSSD													
OTHT SB - JSSD - Block I Testing	Various	TBS	U	0	0	NONE	591	3Q FY02	2667	Dec-02	0	3258	0
SORBDECON													
OTHT SB - Conduct Toxicity Testing of Sorbent Material	MIPR	SBCCOM, APG, MD	U	0	200	1Q FY01	0	NONE	0	NONE	0	200	150
Subtotal III. Test and Evaluation:				0	1162		1768		2667		0	5597	
Remarks:													



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>DE4</b>		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
PM/MS C - Joint IPT Support	MIPR	Various	U	0	918	Nov-00	341	Nov-01	0	NONE	0	1259	0
JSSSED													
PM/MS S - JSSSED - Service IPT Support	MIPR	Various	U	0	1031	1Q FY01	500	1Q FY02	848	1Q FY03	0	2379	0
SORBDECON													
PM/MS S - Develop and Support Milestone (MS) III Documentation for Operator Spray Down Systems	MIPR	SBCCOM, APG, MD	U	1734	257	1Q FY01	0	NONE	0	NONE	0	1991	1834
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	104	2Q FY02	0	NONE	0	104	0
Subtotal IV. Management Services:				1734	2206		945		848		0	5733	
Remarks: SORBDECON - Milestone III included integration of the sorbent powder into an applicator; a market survey; testing of commercial applicators; and area coverage testing.													
TOTAL PROJECT COST:				1734	3368		6143		6972		0	18217	
<div style="display: flex; justify-content: space-between; padding: 10px;"> <span>Project DE4</span> <span>Page 70 of 112 Pages</span> <span>Exhibit R-3 (PE 0603884BP)</span> </div>													

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>HS4</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
HS4      HOMELAND SECURITY (DEMVAL)	0	0	55000	0	0	0	0	0	55000

**A. Mission Description and Budget Item Justification:**

**Project HS4 HOMELAND SECURITY (DEMVAL):** The Homeland Security System Development and Demonstration program is focused on supporting a dual use operational capability for integrated biological surveillance, detection, and warning in the National Capital Region (NCR) with technology insertions for improved performance and response. The biological surveillance system will be used to detect and alert to a biological attack upon US urban assets, thus gaining time for an earlier, more informed public health and law enforcement response (e.g., start treatment, secure hospital beds, etc.). This capability will be achieved primarily through the fusion of environmental sampling/sensors and non-traditional detection using health, plant, and animal indicators. There are two approaches for early detection of a covert release of biological warfare pathogens. The first uses sensors and environmental sampling to identify biological agents within minutes to several hours, depending on the analysis processes used. The second approach consists of looking for early signs and symptoms of disease in human, animal, and plant populations. The purpose of the program described here is to integrate the two approaches to obtain seamless early alerting benefits for military and civilian populations in the area under surveillance.

**FY 2001 Accomplishments: None**

**FY 2002 Planned Program: No planned program**

Project HS4
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>HS4</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 6000 Homeland Security (Dev/Prod/Mgt) - Initiate system demonstration and testing of networked sensor ensemble to include next generation camera assay reader.</li> <li>• 4000 Homeland Security (Dev/Prod/Mgt) - Initiate system integration and demonstration of the next generation UV trigger device for enhanced biological generic detection.</li> <li>• 5000 Homeland Security (Dev/Prod/Mgt) - Demonstrate internal building surveillance using Mass Spectrometer chemical and biological detection.</li> <li>• 4000 Homeland Security (Dev/Prod/Mgt) - Demonstrate integration and testing of advanced aerosol collectors and an automated dry filter collector concentrator.</li> <li>• 8000 Homeland Security (Dev/Prod/Mgt) - Initiate system integration and demonstration of the JBPDS Block II upgrade breadboard.</li> <li>• 6500 Homeland Security (Dev/Prod/Mgt) - Initiate system integration and testing of UV standoff candidates for fixed site protection.</li> <li>• 1000 Homeland Security (Dev/Prod/Mgt) - Conduct ambient breeze tunnel (ABT) testing of systems and components.</li> <li>• 1000 Homeland Security (Dev/Prod/Mgt) - Conduct background aerosol measurements and characterization.</li> <li>• 1000 Homeland Security (Dev/Prod/Mgt) - Conduct indoor building flow characterization and testing.</li> <li>• 1000 Homeland Security (Dev/Prod/Mgt) - Fabricate ABT for system and component testing.</li> <li>• 3000 Homeland Security (Dev/Prod/Mgt) - Initiate systems engineering studies for deployment of sensors in the NCR.</li> <li>• 1000 Homeland Security (Dev/Prod/Mgt) - Conduct wargames/tabletop exercises for CONOPS development.</li> </ul>		
Project HS4	Page 72 of 112 Pages	Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>HS4</b>
<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 3000 Homeland Security (Dev/Prod/Mgt) - Initiate system integration and development of an automated biological agent testing system for laboratory analysis.</li> <li>• 3000 Homeland Security (Dev/Prod/Mgt) - Initiate system development of core antibodies for ORIGIN and HHA devices.</li> <li>• 4000 Homeland Security (Dev/Prod/Mgt) - Initiate system development and testing of improved reagent taggants (UCP, Quantum, Fluorescent, Dentrimer) and multiplex assays and readers.</li> <li>• 3500 Homeland Security (Dev/Prod/Mgt) - Initiate system development of PCR reagents QA/QC and validation testing protocols, and conduct downselect small scale fabrication and testing.</li> </ul> <p><b>Total</b>      55000</p> <p><b>B. <u>Other Program Funding Summary:</u></b> N/A</p> <p><b>C. <u>Acquisition Strategy:</u></b> The Bio Surveillance system will be used to detect and alert to a biological attack upon US urban assets, thus gaining time for an earlier, more informed public health and law enforcement response (e.g., start treatment, clear hospital beds, etc.). This capability will be achieved primarily through the fusion of environmental sampling/sensors and non-traditional detection using health, plant, and animal indicators. This program will utilize and leverage ongoing efforts in advanced development and existing procurement efforts, executed by the Program Executive Office for Chemical and Biological Defense (PEOCBD) as well as promising technologies identified by the Defense Threat Reduction Agency (DTRA) and the DoD Combating Terrorism Technology Task Force. The Chemical Biological Defense Program will provide guidance and oversight to ensure a comprehensive and fully coordinated effort.</p>		
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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**HS4****D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
HLS																																
System Integration, Testing and Demonstration of Bio Detection Systems and Reagents													1Q	<div></div>	4Q																	

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA4 - Demonstration and Validation

PE NUMBER AND TITLE

0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)

PROJECT

HS4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HLS													
HW C - Network Esembler	MIPR	NSWC - Dahlgren, Dahlgren, VA	U	0	0	NONE	0	NONE	6000	1Q FY03	0	6000	0
HW C - UV Trigger Upgrade	C/CPFF	MIT Lincoln Lab, Boston, MA	F	0	0	NONE	0	NONE	4000	1Q FY03	0	4000	0
HW C - Mass Spectrometer Internal Building Surveillance	C/CPFF	TBS		0	0	NONE	0	NONE	5000	NONE	0	5000	0
HW C - Advanced Aerosol Collectors demonstration	C/CPFF	SENTEL Corp., Alexandria, VA & TBS	C	0	0	NONE	0	NONE	4000	1Q FY03	0	4000	0
SW SB - ES - Systems Engineering	MIPR	Institute for Defense Analysis, Alexandria, VA	F	0	0	NONE	0	NONE	1000	2Q FY03	0	1000	0
SW SB - ES Studies Modeling	C/CPFF	Johns Hopkins Applied Physics Laboratory, Scaggsville, MD	F	0	0	NONE	0	NONE	2000	1Q FY03	0	2000	0
HW S - Ambient Breeze Tunnel Construction	C/FFP	BATTELLE, Columbus, OH	N	0	0	NONE	0	NONE	1000	2Q FY03	0	1000	0
HW C - Background Aerosol Measurements	MIPR	TBS	U	0	0	NONE	0	NONE	1000	1Q FY03	0	1000	0
HW C - Indoor Building flow Characterization	MIPR	TBS	U	0	0	NONE	0	NONE	1000	1Q FY03	0	1000	0
HW C - UV Standoff/Fixed Site	C/CPFF	TBS	C	0	0	NONE	0	NONE	6000	2Q FY03	0	6000	0
HW C - JBPDS Block II	C/CPFF	TBS	C	0	0	NONE	0	NONE	6500	2Q FY03	0	6500	0

Project HS4

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Exhibit R-3 (PE 0603884BP)

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**HS4**

I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HW C - Automated Bio Testing System	MIPR	SBCCOM, Edgewood, MD	U	0	0	NONE	0	NONE	3000	1Q FY03	0	3000	0
HW C - Critical Reagent Development	MIPR	USAMRIID, Frederick, MD	U	0	0	NONE	0	NONE	3000	1Q FY03	0	3000	0
HW C - Reagent Taggants/Multiplex	C/CPFF	TBS	C	0	0	NONE	0	NONE	4000	2Q FY03	0	4000	0
HW C - PCR Reagents and Protocols	MIPR	TBS	U	0	0	NONE	0	NONE	3500	2Q FY03	0	3500	0
Subtotal I. Product Development:				0	0		0		51000		0	51000	

Remarks:

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HLS													
TD/D C - Wargaming/Tabletop CONOPS Development	C/CPFF	TBS	C	0	0	NONE	0	NONE	1000	2Q FY03	0	1000	0
Subtotal II. Support Costs:				0	0		0		1000		0	1000	

Remarks:

Project HS4

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Exhibit R-3 (PE 0603884BP)

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# CDBP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**HS4**

III. Test and Evaluation: Not applicable

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HLS													
PM/MS C - PEOCBD Program Management Support	Allot	PEOCBD, Falls Church, VA	U	0	0	NONE	0	NONE	3000	1Q FY03	0	3000	0
Subtotal IV. Management Services:				0	0		0		3000		0	3000	

Remarks:

TOTAL PROJECT COST:

0

0

0

55000

0

55000

Project HS4

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>IP4</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
IP4      INDIVIDUAL PROTECTION (DEMVAL)	16610	14317	0	0	0	0	0	0	30927

**A. Mission Description and Budget Item Justification:**

**Project IP4 INDIVIDUAL PROTECTION (DEMVAL):**

This project funds System Acquisition of individual protection equipment aimed at improving current protection levels while reducing physiological and logistical burdens. The goal is to provide equipment that allows the individual soldier, sailor, airman, or marine to operate in a contaminated chemical and biological (CB) environment with no or minimal degradation to his/her performance. This project includes the Joint Service General Purpose Mask (JSGPM) and the Joint Service Aircrew Mask (JSAM). The JSGPM will reduce weight, bulk, and breathing resistance by as much as 50 percent over previously fielded masks. The JSGPM will also improve vision coupling, communication effectiveness, and comfort/wearability. The mask will significantly reduce total ownership cost/life cycle cost. The JSGPM will be low maintenance and priced to be classified as disposable/replaceable after decontamination. JSAM will provide rotary and fixed wing aircrew members with above-the-shoulder CB protection and, when integrated with a Pressure Breathing for G system, will provide anti-G protection in high performance aircraft. JSAM will integrate with existing aircrew life support systems equipment and support equipment.

Project IP4
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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>IP4</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 5422 JSAM - Continued design, initial development, and contractor sub-system qualification testing in preparation for prototype fabrication.</li> <li>• 1452 JSAM - Continued risk reduction/system engineering/Cost As an Independent Variable (CAIV) analysis studies/program management activities.</li> <li>• 888 JSAM - Continued government test working group activities. The government test team conducted 13 Test Planning Working Group meetings to draft plans and procedures for Program Definition/Risk Reduction (PDRR) prototype testing.</li> <li>• 1201 JSGPM - Continued preparation for Interim Progress Review and transitioned to the System Demonstration acquisition phase. These activities included finalization of the Single Acquisition Management Plan (SAMP), Test and Evaluation Master Plan (TEMP), and the Manpower and Personnel Integration (MANPRINT) Plan.</li> <li>• 6245 JSGPM - Continued Program Definition and Risk Reduction contract for mask design and 800 prototypes at \$1500 each. Contractor initiated design of mask to Joint Service performance specifications with Joint Service input.</li> <li>• 1142 JSGPM - Conducted Engineering Design Test (EDT) planning. Testing ensured meeting Joint Service requirements for protection, communication, drinking, breathing resistance, and weight/bulk limitations.</li> <li>• 260 JSGPM - Continued sustainment study for logistics support.</li> </ul>		
<b>Total</b>	16610	
<div>Project IP4</div> <div>Page 79 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>IP4</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 3317 JSAM - Completed PDRR test plans/procedures. The Government will evaluate the prototypes for chemical agent permeation, fit factor, positive pressure breathing for altitude, anti-G endurance (centrifuge), air crew life support equipment integration and aircraft interface checks, human factors and environmental factors. Initiate test planning for system demonstration phase.</li> <li>• 4452 JSAM - Completed contractor qualification test and fabricated prototypes (25 of each variant). Total number of variants and cost per prototype is competition sensitive information. Delivered prototypes to the government for PDRR testing on 30 Jan 2002.</li> <li>• 1858 JSAM - Continue system engineering and program management activities and support government PDRR prototype testing. Prepare for MS B Interim Progress Review (IPR) and transition to System Demonstration.</li> <li>• 739 JSGPM - Complete preparation for Interim Progress Review and transition to the System Demonstration acquisition phase. These activities will include finalization of the Single Acquisition Management Plan (SAMP), Test and Evaluation Master Plan (TEMP), and the Manpower and Personnel Integration (MANPRINT) Plan.</li> <li>• 1500 JSGPM - Complete Program Definition and Risk Reduction contract for mask design and 800 prototypes at \$1500 each. Contractor will design mask to Joint Service performance specifications with Joint Service input.</li> <li>• 2008 JSGPM - Conduct Engineering Design Test (EDT). Testing ensures meeting Joint Service requirements for protection, communication, drinking, breathing resistance, and weight/bulk limitations.</li> <li>• 200 JSGPM - Continue sustainment study for logistics support.</li> <li>• 243 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	14317	
Project IP4	Page 80 of 112 Pages	Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>IP4</b>	
<b>FY 2003 Planned Program: No planned program</b>									
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
IP5 INDIVIDUAL PROTECTION (EMD)	8288	20711	39044	36195	12735	1411	0	0	118384
JA0002 JT SVC AVIATION MASK (JSAM)	0	0	0	0	0	10970	10971	Cont	Cont
JA0003 JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	0	0	0	0	15735	25518	34802	Cont	Cont
JN0011 AERP AIRCRAFT MODS	1574	2941	896	0	0	0	0	0	5411
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	5379	2312	3186	0	0	0	0	0	10877
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	0	0	11859	4963	4931	4938	4933	Cont	Cont
JX0055 INDIVIDUAL PROTECTION (IP) ITEMS LESS THAN \$5M	4124	993	0	0	0	0	0	0	5117
M99501 MASK, AIRCRAFT M45	998	454	0	0	0	0	0	0	1452
M99601 MASK, CHEM-BIOLOGICAL PROTECTIVE FIELD: M40/M40A	1485	142	0	0	0	0	0	0	1627
<div style="display: flex; justify-content: space-between;"> <span>Project IP4</span> <span>Page 81 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>									

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>IP4</b>	
<b>B. <u>Other Program Funding Summary (Cont):</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
MA0400 PROTECTIVE CLOTHING	96991	98531	91202	79913	89460	99584	92179	Cont	Cont
MA0480 SECOND SKIN, MASK MCU-2/P	918	3447	13183	0	0	0	0	0	17548
<b>C. <u>Acquisition Strategy:</u></b>									
JSGPM	The Acquisition Strategy requires a combined full-scale development and production contract including contractor logistics support (Program Definition and Risk Reduction, Engineering and Manufacturing Development, and Production). The development/production contract is based on a Joint Service performance specification with special emphasis on reducing weight, bulk, and breathing resistance by as much as 50 percent over current fielded protective masks, and lowest achievable total ownership cost.								
JSAM	Acquisition strategy is to award dual contracts for PDRR with a full and open downselect to one contractor for System Demonstration with production options. Implementation of Cost As An Independent Variable (CAIV) is crucial to the PDRR phase with special emphasis on reducing Life Cycle Cost. JSAM prototypes tested during PDRR will be available to the JPACE program in Oct 02 for physical integration checks.								
<div style="display: flex; justify-content: space-between;"> <span>Project IP4</span> <span>Page 82 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>									

# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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BUDGET ACTIVITY





**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**IP4****D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JSAM																																
Milestone I				2Q																												
Program Definition and Risk Reduction (PDRR)				4Q					4Q																							
Program Definition and Risk Reduction (PDRR) Prototype Fabrication/Delivery								4Q					2Q																			
Program Definition and Risk Reduction (PDRR) Prototype Government Test												2Q	3Q																			
Milestone B In Process Review (IPR) (IP5)												3Q																				
JSGPM																																
Test Evaluation Master Plan (TEMP) Approved	>>								1Q																							
Development Contract Award				2Q																												
Engineering Design Test (EDT) Planning								1Q					4Q																			
Engineering Design Test (EDT)												1Q																				
First Prototype												1Q																				
Interim Progress Review (IPR) for Transition to Systems Demonstration Phase												2Q																				

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# CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA4 - Demonstration and Validation

PE NUMBER AND TITLE

0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)

PROJECT

IP4

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
HW S - JSAM Initial Development	C/CPFF	SAIC, Abingdon, MD	C	1659	2494	1Q FY01	2463	1Q FY02	0	NONE	0	6616	0
SW S - JWARN SDD Contract	C/CPFF	Gentex Corp., Rancho Cucamonga, CA	C	1659	2731	1Q FY01	1989	1Q FY02	0	NONE	0	6379	0
JSGPM													
SW SB - PDRR Contract for Mask Design and 800 Prototypes	C/CPFF	Avon Inc., Cadillac, MI	C	3800	5466	Feb-01	1500	1Q FY02	0	NONE	0	10766	9300
Subtotal I. Product Development:				7118	10691		5952		0		0	23761	

Remarks:

Project IP4

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Exhibit R-3 (PE 0603884BP)

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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RDT&amp;E DEFENSE-WIDE/

BA4 - Demonstration and Validation

PE NUMBER AND TITLE

0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)

PROJECT

IP4

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
ILS S - JSAM - Supportability Analysis	C/CPFF	SAIC, Abingdon, MD	C	0	98	1Q FY01	0	NONE	0	NONE	0	98	0
ILS S - Supportability Analysis	C/CPFF	Gentex Corp., Rancho Cucamonga, CA	C	0	100	NONE	0	NONE	0	NONE	0	100	0
JSGPM													
ILS S - Conduct Sustainment Study for Prime Vendor Delivery and Contractor Logistics Support	PO	PM NBCDS, APG, MD	U	240	260	1Q FY01	200	1Q FY02	0	NONE	0	700	640
TD/D S - Conduct Program/Project Documentation	PO	PM NBCDS, APG, MD	U	600	968	1Q FY01	500	1Q FY02	0	NONE	0	2068	1600
Subtotal II. Support Costs:				840	1426		700		0		0	2966	

Remarks:

Project IP4

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Exhibit R-3 (PE 0603884BP)

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## UNCLASSIFIED

**CBDP PROJECT COST ANALYSIS (R-3 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDTE&E DEFENSE-WIDE/****BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**IP4**

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
DTE S - Govt Test Activities	PO	NAVAIR (Patuxent River, MD) & AFOTEC (Kirtland AFB, NM)	U	120	888	1Q FY01	3317	1Q FY02	0	NONE	0	4325	0
JSGPM													
OTHT SB - Conduct Engineering Design Test (EDT) planning	Various	DTC, APG, MD; HRED, APG, MD	U	500	1006	1Q FY01	2008	1Q FY02	0	NONE	0	3514	0
Subtotal III. Test and Evaluation:				620	1894		5325		0		0	7839	

Remarks:

Project IP4

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Exhibit R-3 (PE 0603884BP)

UNCLASSIFIED

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>IP4</b>		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSAM													
PM/MS S - Mission Support	MIPR	Various	U	1086	1451	1Q FY01	1858	1Q FY02	0	NONE	0	4395	0
JSGPM													
PM/MS S - Conducted Joint Program/Project Management	PO	PM NBCDS, APG, MD	U	1260	1148	1Q FY01	239	1Q FY02	0	NONE	0	2647	2360
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	243	2Q FY02	0	NONE	0	243	0
Subtotal IV. Management Services:				2346	2599		2340		0		0	7285	
Remarks:													
TOTAL PROJECT COST:				10924	16610		14317		0		0	41851	

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>MB4</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
MB4 MEDICAL BIOLOGICAL DEFENSE (DEMVAL)	28465	34343	42617	46775	10271	14874	12361	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project MB4 MEDICAL BIOLOGICAL DEFENSE (DEMVAL):** This project funds advanced development including Component Advanced Development (CAD) and Systems Development and Demonstration (SDD) for vaccines, drugs, and diagnostic medical devices that are directed against validated biological warfare (BW) agents to include bacteria, viruses, and toxins of biological origin. This project also funds special studies to develop, test, and evaluate novel vaccine formulations to reduce or eliminate "shots" and to protect U.S. forces from BW agents. Efforts for medical biological defense product development include establishing standards and reference material for manufacturing and preliminary safety studies in animals. This data (manufacturing process development, pilot lot manufacturing, and non-clinical safety/toxicology studies) are submitted in support of an Investigational New Drug (IND) application with the Food and Drug Administration (FDA) so that human studies to evaluate product safety and immunogenicity can be conducted. Advanced development efforts are expected to be accomplished within four years. At the end of SDD, the product will transition to the Production and Deployment phase. Products being developed under this program include: Recombinant Botulinum, Next Generation Anthrax, Plague, Smallpox, Tularemia, Staphylococcal Enterotoxins, and Equine Encephalitis vaccines.

Project MB4
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Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>MB4</b>
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 9372 JVAP - Tularemia Vaccine - Continued manufacturing process development for Tularemia vaccine including formulation studies. Conducted development and validation of assays for virulence and potency. Began development of efficacy testing method in animals.</li> <li>• 10288 JVAP - Recombinant Botulinum Vaccine - Continued manufacturing process development and purification refinement of Botulinum vaccines. Prepared master and working seed banks. Began preparation for manufacture of current Good Manufacturing Practices (cGMP) pilot lots.</li> <li>• 2807 JVAP - Equine Encephalitis Vaccines - Completed pilot lot manufacture. Conducted stability and formulation studies and performed assay development and validation for Venezuelan Equine Encephalitis (VEE) 1A vaccine.</li> <li>• 1622 JVAP - Smallpox Vaccine - Submitted IND application and executed clinical trial for Vaccinia Immune Globulin (VIG). Initiated assay development for Smallpox vaccine. Conducted clinical trial for smallpox vaccine licensure studies.</li> <li>• 2932 JVAP - Plague Vaccine - Continued component advanced development for a manufacturing process for combined F1+V Plague vaccine candidate.</li> <li>• 400 JVAP - Next Generation Anthrax Vaccine (NGAV) - Initiated technology transfer and process definition for a candidate recombinant protective antigen NGAV.</li> <li>• 1044 JVAP - Vaccine component advanced development - Initiated development of novel antigens (Ricin, Staphylococcal Enterotoxins), adjuvants, preservatives, and delivery systems for biological defense vaccines. This included formulation and process development studies; preclinical; initial safety and immunogenicity studies; and supported technology transfer from the research laboratories.</li> </ul> <p><b>Total</b>      28465</p> <p>Project MB4</p>		
Page 89 of 112 Pages Exhibit R-2 (PE 0603884BP)		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>MB4</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 10230 JVAP - Tularemia Vaccine - Continue efficacy testing and begin immunogenicity, toxicity, and potency studies for Tularemia vaccine. Begin pilot lot manufacturing and stability testing. Conduct pre-IND meeting with FDA.</li> <li>• 11951 JVAP - Recombinant Botulinum Vaccine - Continue manufacturing process refinement studies, including antigen and adjuvant characterization for both serotypes of the recombinant Botulinum vaccine. Begin pilot lot production of individual serotypes and conduct non-clinical testing of multivalent Recombinant Botulinum vaccine.</li> <li>• 2590 JVAP - Equine Encephalitis Vaccines - Conduct process development and safety studies for Venezuelan Equine Encephalitis (VEE) 1A component of the vaccine.</li> <li>• 5105 JVAP - Plague Vaccine - Conduct process development and conduct comparability studies in higher animal species for Plague vaccine. Initiate assay development and validation.</li> <li>• 3500 JVAP - Next Generation Anthrax Vaccine - Conduct process definition studies of candidate recombinant protective antigen NGAV including stability and formulation studies.</li> <li>• 386 JVAP - Vaccine component advanced development - Continue development of novel antigens (Staphylococcal Enterotoxins, Ricin), adjuvants, preservatives, and delivery systems for biological defense vaccines. This includes formulation and process development studies; preclinical; initial safety and immunogenicity studies; and supports technology transfer from the research laboratories.</li> <li>• 581 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	34343	
<div>Project MB4</div> <div>Page 90 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>MB4</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 4684 JVAP - Recombinant Botulinum Vaccine - Continue manufacturing process development and begin process validation for recombinant Botulinum vaccine. Continue manufacturing pilot lots of serotypes A and B.</li> <li>• 5149 JVAP - Recombinant Botulinum Vaccine - Begin bulk stability and final container stability testing of pilot lot.</li> <li>• 2671 JVAP - Recombinant Botulinum Vaccine - Begin single serotype phase 1 clinical trial preparation.</li> <li>• 6688 JVAP - Equine Encephalitis Vaccines - Continue assay development and validation. Continue process optimization including demonstration runs. Begin process validation and pilot lot manufacturing for VEE IE component.</li> <li>• 3620 JVAP - Equine Encephalitis Vaccines - Begin efficacy testing and continue bulk stability testing. Begin container stability testing. Conduct higher animal species testing and equine safety study.</li> <li>• 1592 JVAP - Next Generation Anthrax Vaccine - Complete process definition work for a candidate recombinant protective antigen NGAV. Manufacture and characterize master seed and working seed banks. Conduct assay development and validation.</li> <li>• 4614 JVAP - Plague Vaccine - Manufacture and characterize master seed and working seed banks. Continue assay development and validation.</li> <li>• 1646 JVAP - Plague Vaccine - Complete process development work and conduct pilot lot manufacturing.</li> <li>• 1756 JVAP - Plague Vaccine - Begin process toxicity testing and immunogenicity studies. Begin bulk stability, container stability, and reconstitution stability testing. Conduct pre-IND preparation.</li> <li>• 2965 JVAP - Tularemia Vaccine - Complete characterization studies and surrogate marker of efficacy assay.</li> <li>• 6660 JVAP - Tularemia Vaccine - Begin Phase I clinical trial execution and monitoring.</li> </ul>		
Project MB4	Page 91 of 112 Pages	Exhibit R-2 (PE 0603884BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>MB4</b>																															
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 572 JVAP - Tularemia Vaccine - Conduct bulk stability and final container stability testing of pilot lot. Prepare and submit IND application to FDA.</li> </ul> <p><b>Total</b>      42617</p>																																							
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 8%;"><u>FY 2001</u></th> <th style="width: 8%;"><u>FY 2002</u></th> <th style="width: 8%;"><u>FY 2003</u></th> <th style="width: 8%;"><u>FY 2004</u></th> <th style="width: 8%;"><u>FY 2005</u></th> <th style="width: 8%;"><u>FY 2006</u></th> <th style="width: 8%;"><u>FY 2007</u></th> <th style="width: 8%;"><u>To Compl</u></th> <th style="width: 8%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT</td> <td style="text-align: center;">50629</td> <td style="text-align: center;">55684</td> <td style="text-align: center;">43695</td> <td style="text-align: center;">57626</td> <td style="text-align: center;">62250</td> <td style="text-align: center;">58108</td> <td style="text-align: center;">58841</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> <tr> <td>MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)</td> <td style="text-align: center;">15772</td> <td style="text-align: center;">48500</td> <td style="text-align: center;">44718</td> <td style="text-align: center;">20284</td> <td style="text-align: center;">35904</td> <td style="text-align: center;">36056</td> <td style="text-align: center;">39815</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	50629	55684	43695	57626	62250	58108	58841	Cont	Cont	MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)	15772	48500	44718	20284	35904	36056	39815	Cont	Cont
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																														
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	50629	55684	43695	57626	62250	58108	58841	Cont	Cont																														
MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)	15772	48500	44718	20284	35904	36056	39815	Cont	Cont																														
<b>C. <u>Acquisition Strategy:</u></b> <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 15%; vertical-align: top; padding: 5px;">JVAP</td> <td style="padding: 5px;"> <p>The Prime Systems Contract (PSC) serves as the integrator for the advanced development, licensure, production, storage, testing, and distribution of medical biological defense vaccines and antisera. The PSC serves as the "responsible head" to the Food and Drug Administration for each product during the licensure process and becomes the license holder for the product. The JVAP oversees the PSC.</p> </td> </tr> </table>										JVAP	<p>The Prime Systems Contract (PSC) serves as the integrator for the advanced development, licensure, production, storage, testing, and distribution of medical biological defense vaccines and antisera. The PSC serves as the "responsible head" to the Food and Drug Administration for each product during the licensure process and becomes the license holder for the product. The JVAP oversees the PSC.</p>																												
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<div style="display: flex; justify-content: space-between; margin-top: 20px;"> <span>Project MB4</span> <span>Page 92 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>																																							

# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2002

BUDGET ACTIVITY













**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**MB4****D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
VAC BOT																																		
Process Development			3Q																															
cGMP Pilot Lot									2Q																									
Non-Clinical Testing									2Q																									
Investigational New Drug (IND) Application Submission														2Q																				
Phase 1 Clinical Trial (A/B)																	2Q																	
Phase 2a Clinical Trial																					3Q													
VAC ENC																																		
Process Development			3Q																															
cGMP Pilot Lots						3Q													1Q															
Non-Clinical Testing										1Q																								
Investigational New Drug (IND) Application														4Q																				
Phase 1 Clinical Trials																1Q																		
VAC NGA																																		
Process Development									2Q																									
cGMP Pilot Lot														3Q			1Q																	
Non-Clinical Testing							4Q																											



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																									
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>					PROJECT <b>MB4</b>																						
<b>D. <u>Schedule Profile (cont):</u></b>																																
	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
VAC NGA (Cont)																																
Investigational New Drug (IND) Application																4Q																
Milestone C																4Q	—	2Q														
Phase 2a Clinical Trial																	2Q	—			3Q											
Milestone C																				4Q												
VAC PLG																																
Process Development						2Q	—									1Q																
cGMP Pilot Lot													2Q	—	4Q																	
Non-Clinical Testing													2Q	—																		4Q
Investigational New Drug (IND) Application Submission																4Q	—			4Q												
Phase 1 Clinical Trial																				2Q	3Q											
Phase 2a Clinical Trial																				4Q	—			4Q								
Milestone C																												1Q	—		4Q	
VAC SPX																																
Process Development						3Q	—					1Q																				
Phase 2a Clinical Trial		1Q	—					3Q																								
cGMP Pilot Lot								4Q	1Q																							
Project MB4										Page 94 of 112 Pages										Exhibit R-2 (PE 0603884BP)												

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**MB4****D. Schedule Profile (cont):**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
VAC SPX (Cont)																																
Non-Clinical Testing												3Q	<div></div>																			
Investigational New Drug (IND) Application Submission												2Q																				
Milestone C												1Q																				
VAC TUL																																
Process Development	>>	<div></div>											2Q																			
cGMP Pilot Lot												3Q	4Q																			
Investigational New Drug (IND) Application Submission														2Q																		
Phase 1 Clinical Trial														3Q	4Q																	
Phase 2a Clinical Trial																1Q	<div></div>		1Q													
Milestone C																			2Q													

## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT MB4		
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC BOT													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	2813	Nov-02	0	2813	0
VAC ENC													
HW S - Vaccine Development - Includes consistency lot, pilot lot, and scale-up production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	3918	Nov-02	0	3918	0
VAC NGA													
HW S - Vaccine Development - Includes consistency Lot, Pilot Lot, and scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	1324	Nov-02	0	1324	0
VAC PLG													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	3642	Nov-02	0	3642	0
VAC TUL													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	1737	Nov-02	0	1737	0
VACCINES													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	5536	9371	Nov-00	10987	Nov-01	0	NONE	0	25894	0
Subtotal I. Product Development:				5536	9371		10987		13434		0	39328	
Project MB4													

# CDBP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**MB4**

I. Product Development - Cont.

Remarks: Cost to Complete: "Continuing"

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC BOT													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	123	Nov-02	0	123	0
VAC NGA													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and delivery System.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	42	Nov-02	0	42	0
VAC PLG													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	64	Nov-02	0	64	0

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>MB4</b>		
II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC TUL													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	163	Nov-02	0	163	0
VACCINES													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	2689	4551	Nov-00	5532	Nov-01	0	NONE	0	12772	0
Subtotal II. Support Costs:				2689	4551		5532		392		0	13164	
Remarks: Cost to Complete: "Continuing"													

## UNCLASSIFIED

## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA4 - Demonstration and Validation

PE NUMBER AND TITLE

0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)

PROJECT

MB4

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC BOT													
DTE S - Vaccine Development - Includes Testing, Evaluation, and Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	5174	Nov-02	0	5174	0
VAC ENC													
DTE S - Vaccine Development - Testing, Evaluation, and Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	2869	Nov-02	0	2869	0
VAC NGA													
DTE S - Vaccine Development - Includes Clinical Trials, Non-Clinical Trials, Stability, and Efficacy Testing.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	26	Nov-02	0	26	0
VAC PLG													
DTE S - Vaccine Development - Testing, Evaluation, and Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	1564	Nov-02	0	1564	0
VAC TUL													
DTE S - Vaccine Development - Testing, Evaluation, and Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	4813	Nov-02	0	4813	0

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>MB4</b>		
III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>VACCINES</b>													
DTE S - Vaccine Development - Includes Phase I/II Clinical and Non-clinical Trials, Tox Studies, Surrogate, and Assay Testing	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	6836	10977	Nov-00	12943	Nov-01	0	NONE	0	30756	0
OTHT SB - Vaccine Development - Includes Stability, and Efficacy Testing	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	1107	1439	Nov-00	2278	Nov-01	0	NONE	0	4824	0
Subtotal III. Test and Evaluation:				7943	12416		15221		14446		0	50026	
Remarks: Cost to Complete: "Continuing"													

## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT MB4		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
VAC BOT													
ES C - Support of LR	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	1474	Nov-02	0	1474	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	JVAP, Fort Detrick, MD	U	0	0	NONE	0	NONE	490	Oct-02	0	490	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	PEOCBD, Falls Church, VA	U	0	0	NONE	0	NONE	879	Oct-02	0	879	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	0	NONE	0	NONE	250	Feb-03	0	250	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	0	NONE	0	NONE	164	Feb-02	0	164	0
PM/MS S - Award Fee (Maximum 12.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	1137	Jan-03	0	1137	0
VAC ENC													
PM/MS S - Vaccine Development - Program Management/Program Manager.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	1173	Nov-02	0	1173	0
Project MB4													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2002		
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT MB4		
IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	JVAP, Fort Detrick, MD	U	0	0	NONE	0	NONE	389	Oct-02	0	389	0
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	Allot	Joint Program Office for Biological Defense, Falls Church, VA	U	0	0	NONE	0	NONE	725	Oct-02	0	725	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	0	NONE	0	NONE	199	Feb-03	0	199	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	0	NONE	0	NONE	130	Feb-03	0	130	0
PM/MS S - Award Fee (12.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	905	Jan-03	0	905	0
VAC NGA													
PM/MS S - Award Fee (12.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	200	Jan-03	0	200	0
VAC PLG													
PM/MS S - Vaccine Development - Program Management/Program Manager Support.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	915	Nov-02	0	915	0
Project MB4													

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## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2002		
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA4 - Demonstration and Validation					PE NUMBER AND TITLE 0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)						PROJECT MB4		
IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Vaccine Development - Program Management/Program Manager Support.	Allot	Joint Program Office for Biological Defense, Falls Church, VA	U	0	0	NONE	0	NONE	564	Oct-02	0	564	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	JVAP, Frederick, MD	U	0	0	NONE	0	NONE	304	Oct-02	0	304	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	0	NONE	0	NONE	155	Feb-03	0	155	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	0	NONE	0	NONE	102	Feb-03	0	102	0
PM/MS S - Award Fee (12.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	706	Jan-03	0	706	0
VAC TUL													
PM/MS S - Vaccine Development - Program Management/Program Manager Costs.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	1161	Nov-02	0	1161	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	JVAP, Frederick, MD	U	0	0	NONE	0	NONE	385	Oct-02	0	385	0
Project MB4													
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Exhibit R-3 (PE 0603884BP)													

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>											DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>MB4</b>		
IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	Joint Program Office for Biological Defense, Falls Church, VA	U	0	0	NONE	0	NONE	717	Oct-02	0	717	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	0	NONE	0	NONE	197	Feb-03	0	197	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	0	NONE	0	NONE	129	Feb-03	0	129	0
PM/MS S - Award Fee (12.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	895	Jan-03	0	895	0
VACCINES													
PM/MS S - Program management/program manager support.	Various	Joint Program Office for Biological Defense, Falls Church, VA	U	1931	2127	Oct-00	2022	Oct-01	0	NONE	0	6080	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	581	2Q FY02	0	NONE	0	581	0
Subtotal IV. Management Services:													
				1931	2127		2603		14345		0	21006	
Remarks: Cost to Complete: "Continuing"													
<div>Project MB4</div> <div>Page 104 of 112 Pages</div> <div>Exhibit R-3 (PE 0603884BP)</div>													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)						DATE February 2002						
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>			PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>			PROJECT <b>MB4</b>						
TOTAL PROJECT COST:			18099	28465		34343		42617		0	123524	
Project MB4												
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Exhibit R-3 (PE 0603884BP)												

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>MC4</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
MC4 MEDICAL CHEMICAL DEFENSE (DEMVAL)	2078	1876	1764	1754	1705	2064	2107	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project MC4 MEDICAL CHEMICAL DEFENSE (DEMVAL):** This project funds System Development and Demonstration (SDD) of countermeasures for chemical agents including life support equipment, diagnostic equipment, pretreatment and therapeutic drugs, and individual/casualty decontamination compounds. A system of medical defense against chemical agents is required to provide protection, to sustain performance in a chemical environment, and to provide for self-aid and medical treatment of chemical casualties. Fielding of pretreatment and therapeutic drugs requires Food and Drug Administration (FDA) approval. Multiple long-term studies are required to obtain FDA approval resulting in longer program timelines and greater program cost than other non-pharmaceutical product programs. Efficacy testing of most candidate drugs against Chemical Warfare (CW) agents cannot be conducted in humans; therefore, animal surrogate models must be developed.

**FY 2001 Accomplishments:**

- 327 Pyridostigmine Bromide - Completed clinical bioequivalence study.
- 950 Pyridostigmine Bromide - Initiated program in surrogate species to validate markers of efficacy.
- 519 Pyridostigmine Bromide - Initiated clinical program in humans to validate markers of efficacy.
- 99 Advanced Anticonvulsant - Conducted a Subject Matter Expert program review.
- 88 Advanced Anticonvulsant - Initiated a study to compare midazolam to FDA approved seizure drugs for nerve agent induced seizures.

Project MC4
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>	PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>	PROJECT <b>MC4</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>95 Advanced Anticonvulsant - Conducted a review on the three leading anticonvulsant candidates for potential serious side effects.</li> </ul>		
<b>Total</b>	2078	
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>303 Pyridostigmine Bromide - Continue clinical protocol to validate markers of efficacy.</li> <li>1064 Advanced Anticonvulsant - Complete 2-year study in surrogate species to validate markers of efficacy.</li> <li>419 Advanced Anticonvulsant - Start the development of the manufacturing processes, material requirements, formulation, and packaging for the advanced anticonvulsant to be used in clinical studies.</li> <li>58 Advanced Anticonvulsant - Complete a study to compare midazolam to FDA approved seizure drugs for nerve agent induced seizures.</li> <li>32 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	1876	
<div>Project MC4</div> <div>Page 107 of 112 Pages</div> <div>Exhibit R-2 (PE 0603884BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>				PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>				PROJECT <b>MC4</b>				
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 213 Pyridostigmine Bromide - Complete clinical protocol to validate markers of efficacy.</li> <li>• 468 Advanced Anticonvulsant - Prepare and submit documentation for Investigational New Drug application.</li> <li>• 383 Advanced Anticonvulsant - Continue the development of the manufacturing processes, material requirements, formulation, and packaging for the advanced anticonvulsant to be used in clinical studies.</li> <li>• 50 Advanced Anticonvulsant - Prepare documentation for and conduct Milestone II in-process review.</li> <li>• 50 Advanced Anticonvulsant - Complete evaluation of FDA approved seizure drugs for nerve agent induced seizures.</li> <li>• 50 Active Topical Skin Protectant (active TSP) - Prepare documentation for and conduct a Milestone Decision Review.</li> <li>• 292 Active TSP - Conduct a safety evaluation study in animals.</li> <li>• 50 Nerve Agent Scavenger - Prepare documentation for and conduct a Milestone Decision Review.</li> <li>• 208 Nerve Agent Scavenger - Formulate for a pre-clinical toxicity study.</li> </ul> <p><b>Total</b>            1764</p>												
<b>B. <u>Other Program Funding Summary:</u></b>				<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
MC5 MEDICAL CHEMICAL DEFENSE (EMD)				1050	1463	1973	1486	1448	1727	1763	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project MC4</span> <span>Page 108 of 112 Pages</span> <span>Exhibit R-2 (PE 0603884BP)</span> </div>												

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**DATE  
**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**MC4****C. Acquisition Strategy:**

Pyrido Bromide In-house/contractor development to FDA licensure, followed by sole source procurement.

Adv Anticonvuls In-house/contractor development to FDA licensure, followed by sole source procurement.

**D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
MEDCHEM																																
Advanced Anticonvulsant - Milestone I				4Q																												
Advanced Anticonvulsant - Milestone II													3Q																			
Active TSP - Milestone A													1Q																			
Nerve Agent Scavenger - Milestone A													2Q																			
Advanced Anticonvulsant - Conduct studies and reviews								1Q																								
Active TSP - Conduct safety studies													2Q			4Q																
Nerve Agent Scavenger - Conduct pre-clinical toxicity study													1Q			3Q																



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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>MC4</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MEDCHEM													
HW S - Formulate Advanced Anticonvulsant in Autoinjector	C/CPFF	TBS	C	0	0	NONE	429	1Q FY02	381	1Q FY03	0	810	0
HW S - FDA Documentation for Advanced Anticonvulsant	Allot	USAMMDA, Ft Detrick, MD	U	0	0	NONE	0	NONE	467	1Q FY03	0	467	0
HW S - Milestone II IPR for Advanced Anticonvulsant	C/CPFF	Cambridge Consulting Corp, Reston, VA	C	0	0	NONE	0	NONE	50	1Q FY03	0	50	0
SW SB - Formulate Nerve Agent Scavenger for Pre-clinical Study	PO	TBS	C	0	0	NONE	0	NONE	209	1Q FY03	0	209	0
HW S - Milestone I IPR for Active TSP	PO	Cambridge Consulting Corp, Reston, VA	C	0	0	NONE	0	NONE	50	1Q FY03	0	50	0
HW S - Milestone I IPR for Nerve Agent Scavenger	PO	Cambridge Consulting Corp, Reston, VA	C	0	0	NONE	0	NONE	50	2Q FY03	0	50	0
HW C - Subject Matter Expert In-Process Review for Advanced Anticonvulsant	PO	Cambridge Consulting Corp, Reston, VA	C	0	99	3Q FY01	0	NONE	0	NONE	0	99	0
SW S - Data Search on Anticonvulsant Candidates - Advanced Anticonvulsant	PO	Cambridge Consulting Corp, Reston, VA	C	0	95	4Q FY01	0	NONE	0	NONE	0	95	0
Subtotal I. Product Development:				0	194		429		1207		0	1830	
Remarks:													

Project MC4

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Exhibit R-3 (PE 0603884BP)

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# **CBDP PROJECT COST ANALYSIS (R-3 Exhibit)**

DATE  
**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA4 - Demonstration and Validation**

PE NUMBER AND TITLE

**0603884BP CHEMICAL/BIOLOGICAL DEFENSE  
(DEMVAL)**

PROJECT

**MC4**

II. Support Costs: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MEDCHEM													
DTE S - Bioequivalence Studies of Pyridostigmine Bromide	PO	TBS	C	412	327	1Q FY01	0	NONE	0	NONE	0	739	370
DTE S - Preclinical Efficacy Study of Advanced Anticonvulsant	Allot	USA Medical Research Institute of Chemical Defense, APG, MD	U	0	0	NONE	1046	1Q FY02	0	NONE	0	1046	0
DTE S - Safety Evaluation Study of Active TSP in Animals	PO	TBS	C	0	0	NONE	0	NONE	293	1Q FY03	0	293	0
DTE S - Ex Vivo Rhesus Muscle Study for Pyridostigmine Bromide	SS/FFP	DTSL Chemical & Biological Sciences, United Kingdom	C	0	950	4Q FY01	0	NONE	0	NONE	0	950	0
DTE S - Clinical Protocol of Effects of Pyridostigmine on Excised Muscle	C/CPAF	University of California, Davis, CA	C	0	519	4Q FY01	310	1Q FY02	214	1Q FY03	0	1043	0
DTE S - Advanced Anticonvulsant - Evaluate FDA Approved Seizure Drugs	Allot	USA Medical Research Institute of Chemical Defense, APG, MD		0	88	1Q FY01	59	1Q FY02	50	1Q FY03	0	197	0
Subtotal III. Test and Evaluation:				412	1884		1415		557		0	4268	

Remarks:

Project MC4

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Exhibit R-3 (PE 0603884BP)

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA4 - Demonstration and Validation</b>					PE NUMBER AND TITLE <b>0603884BP CHEMICAL/BIOLOGICAL DEFENSE (DEMVAL)</b>						PROJECT <b>MC4</b>		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	32	2Q FY02	0	NONE	0	32	0
Subtotal IV. Management Services:				0	0		32		0		0	32	
Remarks:													
TOTAL PROJECT COST:				412	2078		1876		1764		0	6130	

Project MC4

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## **BUDGET ACTIVITY 5**

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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	98836	161383	169018	95335	53366	45409	42189	Continuing	Continuing
BJ5 BIOLOGICAL DEFENSE (EMD)	7575	12803	14660	17977	17315	37632	35708	Continuing	Continuing
CA5 CONTAMINATION AVOIDANCE (EMD)	59268	71421	58341	17756	0	0	0	0	206786
CM5 WMD - CIVIL SUPPORT TEAM (EMD)	0	0	1000	1000	14500	400	0	0	16900
CO5 COLLECTIVE PROTECTION (EMD)	3137	3987	4301	4143	4207	4239	4718	Continuing	Continuing
DE5 DECONTAMINATION SYSTEMS (EMD)	3746	2498	4981	4925	897	0	0	0	17047
IP5 INDIVIDUAL PROTECTION (EMD)	8288	20711	39044	36195	12735	1411	0	0	118384
MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)	15772	48500	44718	11853	2264	0	0	0	123107
MC5 MEDICAL CHEMICAL DEFENSE (EMD)	1050	1463	1973	1486	1448	1727	1763	Continuing	Continuing

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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

## PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

**A. Mission Description and Budget Item Justification:** Operational forces have an immediate need to survive, safely operate, and sustain operations in a chemical and biological agent threat environment across the continuum of global, contingency, special operations/low-intensity conflict, counter-narcotics, and other high risk missions. Operating forces have a critical need for defense against worldwide proliferation of Chemical and Biological (CB) warfare capabilities and for medical treatment of casualties in medical treatment facilities. Congress has directed centralized management of Department of Defense (DoD) CB Defense initiatives, both medical and non-medical. This program element supports the Engineering and Manufacturing Development (EMD) of CB defensive equipment, both medical and non-medical. These projects have been restructured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, force protection (individual and collective), decontamination, and medical countermeasures. The consolidation will provide for development and operational testing of equipment for Joint Service as well as Service-unique requirements.

Contamination avoidance efforts under this engineering and manufacturing development program will provide U.S. forces with real-time hazard assessment capabilities. They include advanced multi-agent point and remote chemical detection systems for ground, aircraft, and shipboard applications; automated warning and reporting systems; integrated radiation detection and monitoring equipment; and enhanced battlefield reconnaissance capabilities. Force protection efforts will increase protection levels while decreasing physical and psychological burdens imposed by protective equipment. They include improved aircrew respiratory protection, lightweight integrated suit technology, and shipboard collective protection equipment.

Weapons of Mass Destruction Civil Support Team (WMD CST) efforts provide for development and testing of a Unified Command Suite (UCS) and a Mobile Analytical Laboratory Platform (MALS) for these teams.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
<p>The medical chemical defense engineering and manufacturing development program funds improved medical equipment and drugs essential to counteracting lethal and performance-degrading effects of chemical threats and medical equipment essential to meeting medical requirements on the integrated battlefield with emphasis on decreased size/weight and high mobility, yet supporting large numbers of combat casualties. Additionally, foreign medical materiel may be procured for exploitation of advanced technology and development to meet medical defense goals. This program element supports the full-scale development of prophylactic and therapeutic drugs and rapid identification and diagnostic systems.</p> <p>DoD Biological Defense mission requires the detection of validated biological threat agents to provide early warning capabilities on mobile and fixed platforms. This program element will provide theater protection through the development of point and stand-off detection systems. The detection system concept will provide detection, identification, warning, and sample collection for verification that a biological agent attack has occurred. This program element also provides for the development of biological defense medical programs. DoD Biological Defense medical mission will address: (1) protective vaccines - vaccination capability against the most probable biological threat agents; (2) identification - clinical identification of biological threat agents through medical evaluation and laboratory analysis to augment early warning capabilities.</p> <p>The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.</p>		
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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)****B. Program Change Summary:**

		<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>
Previous President's Budget (FY 2002 PB)		102707	159943	142243
Appropriated Value		104015	162443	0
Adjustments to Appropriated Value		0	0	0
a. Congressional General Reductions		-728	-1060	0
b. SBIR/STTR		-1738	0	0
c. Omnibus or Other Above Threshold Reductions		0	0	0
d. Below Threshold Reprogramming		-2486	0	0
e. Rescissions		-227	0	0
Adjustments to Budget Years Since FY 2002 PB		0	0	26775
Current Budget Submission (FY 2003 PB)		98836	161383	169018

**Change Summary Explanation:**

**Funding:** FY03 - Realignment of funding within the CBDP to allow for the continuation and completion of significant EMD efforts (+\$26,579K); increase to the EMD program for WMD Civil Support Teams (CSTs) in a new project CM5 (+\$1,000K); adjustment for inflation assumptions (-\$804K).

**Schedule:****Technical:****C. Other Program Funding Summary:** See section B in the R2A's

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>BJ5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
BJ5 BIOLOGICAL DEFENSE (EMD)	7575	12803	14660	17977	17315	37632	35708	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project BJ5 BIOLOGICAL DEFENSE (EMD):** The Department of Defense's (DoD) Biological Defense mission requires the detection and identification of biological threat agents to provide early-warning capabilities to mobile forces and high-value fixed-site assets. The detection system concept will provide detection, identification, warning, and sample collection for verification of large area and point source biological agent attacks.

The Joint Biological Point Detection System (JBPDS) program is an evolutionary advancement of the Army Biological Integration Detection System (BIDS), Navy Interim Biological Agent Detection System (IBADS) and Air Force and Marine Corps Service-specific development programs. This suite will be integrated onto Service-specific platforms (e.g., Joint Service Lightweight NBC Reconnaissance System (JSLNBCRS), Army IAV NBC Reconnaissance System, ships, etc.), employed at fixed sites (e.g., airbases, and ports), and may be deployed as a portable system for expeditionary and forward operating forces. The JBPDS is a common detection system employed by all services, thus greatly enhancing Joint Service interoperability. The JBPDS is a fully automated system that increases the number of agents that can be identified by the current BIDS and IBADS, and provides first-time point biological detection capability to the Air Force and Marine Corps. Spiral development with an evolutionary component/suite upgrade acquisition approach (JPBDS Block II program) will be used to take advantage of emerging technologies and to provide the Services with enhanced bio detection performance at lower life cycle costs.

Project BJ5
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>BJ5</b>
<p>This project includes IBADS continued operational support. IBADS gives the Navy an interim point detection capability aboard ships at sea, which will be part of the theater protection strategy. The JBPDS Block I will replace the IBADS beginning in FY03.</p> <p>The Critical Reagent Program (CRP) integrates and consolidates all Department of Defense (DoD) reagents/antibodies/DNA biological detection requirements from demonstration/validation through production. The CRP ensures the availability of high-quality reagents throughout the life-cycle of all Biological Warfare (BW) detection/identification systems. This project supports all aspects of manufacturing "SCALE-UP" of developmental protocols for Critical Reagent Program-developed products, including maintenance of repositories and validation laboratories.</p> <p>The Joint Biological Standoff Detection System (JBSDS) will be employed to provide detection of biological hazards and will provide early warning via the Joint Warning and Reporting System (JWARN). JBSDS will augment and integrate with existing biological detection systems to provide a biological detection network capable of near real time detection and warning theater-wide, to limit the effects of biological agent hazards against U.S. forces at the tactical and operational level. It will be employed in support of various areas of interest (e.g. fixed sites, air/sea ports of debarkation, amphibious landing sites, etc.). JBSDS will be capable of operating remotely or on platforms to include vehicles, aircraft, and ships.</p> <p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 1097 CRP - Initiated transition of newly developed protocols to full scale production. Maintained reagent repositories and validation processes.</li> <li>• 298 IBADS - Continued engineering and material support of rapid prototype systems.</li> </ul>		
Project BJ5	Page 6 of 113 Pages	Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>BJ5</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>• 3179 JBPDS - Block I effort - Conducted Operational Assessment II and supported Block I IOT&amp;E planning required for a Milestone III decision.</li> <li>• 1764 JBPDS - Block I effort - Conducted Risk Reduction and initiated Product Improvements on system suite and the Biological Aerosol Warning System (BAWS) detector design.</li> <li>• 1237 JBPDSBLK2 - Initiated Block II design studies to define performance specifications, identify potential design concepts, and reduce risk to the EMD program. Initiated preparations of the request for proposal for Block II EMD contract.</li> </ul> <b>Total</b> 7575		
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 1122 CRP - Continue transition of newly developed ITF-6B Protocols. Maintain reagent repositories and validation processes.</li> <li>• 328 IBADS - Continue engineering and material support of rapid prototype systems.</li> <li>• 4650 JPBDS - Block I effort - Conduct Initial Army Operational Test and Evaluation (IOT&amp;E) at the Dugway Proving Ground, Utah.</li> <li>• 2236 JPBDS - Block I effort - Initiate planning for USAF, USMC, and Navy IOT&amp;E.</li> <li>• 49 JBPDSBLK2 - Initiate Biological Aerosol Warning System (BAWS) laser reliability test planning.</li> <li>• 4201 JBSDS - Continue system development and integration initiated in the TT BIO program of a lightweight, short range, biological standoff detection system as a future candidate to the JBSDS Block I program.</li> </ul>		
Project BJ5	Page 7 of 113 Pages	Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>BJ5</b>
<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>217 SBIR - Small Business Innovative Research.</li> </ul> <p><b>Total</b> 12803</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>2087 CRP - Continue transition of ITF-6B protocols. Initiate insertion of ITF-6B reagents into assay formats. Maintain reagent repositories and validation processes.</li> <li>403 IBADS - Continue engineering and material support of rapid prototype systems.</li> <li>2488 JBPDS - Block I effort - Complete Army IOT&amp;E and report. Conduct USAF, USMC, and Navy IOT&amp;E.</li> <li>5728 JBSDS - Transition early warning standoff systems developed in the TT-Bio program into the Systems Integration phase of the JBSDS program.</li> <li>1954 JBSDS - Conduct developmental testing (DT) of JBSDS competing candidate systems.</li> <li>2000 JBSDS - Initiate limited operational testing (OT) and assessment of JBSDS competing candidate systems.</li> </ul> <p><b>Total</b> 14660</p>		
<p>Project BJ5</p> <p>Page 8 of 113 Pages</p> <p>Exhibit R-2 (PE 0604384BP)</p>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>BJ5</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	9018	0	0	0	12194	15956	31916	Cont	Cont
HS9000 HOMELAND SECURITY PRODUCTION	0	0	30000	0	0	0	0	0	30000
JP0100 JOINT BIO POINT DETECTION SYSTEM (JBPDS)	27260	36324	67528	75245	73514	56735	50879	Cont	Cont
JPO210 CRITICAL REAGENTS PROGRAM (CRP)	4284	1913	2010	1850	1894	2251	2301	Cont	Cont
JPO230 PORTAL SHIELD EQUIPMENT	26192	3865	0	0	0	0	0	0	30057
M93001 BIO INTEGRATED DETECTOR SYSTEM (BIDS)	33319	55060	0	0	0	0	0	0	88379
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	0	0	28345	50623	66594	74019	81867	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project BJ5</span> <span>Page 9 of 113 Pages</span> <span>Exhibit R-2 (PE 0604384BP)</span> </div>									

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BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>BJ5</b>

**C. Acquisition Strategy:**

CRP Contract development of reagents to detect threat agents and procurement of more effective reagents to replace older stocks. The BJ5 program transitions these reagent protocols into production following the testing of these reagents in fielded platforms. ITF-6A Priority List completed in FY01. Continue to focus efforts on developing and transitioning reagents against the ITF-6B Priority List in order to meet JBPDS Block II requirement.

JBPDS Block I Contractor design, fabrication, platform integration, and testing of JBPDS prototypes. A Low Rate Initial Production (LRIP) decision in FY00 provided production representative systems for Operational Assessment II and Initial Operational Test and Evaluation (IOT&E) in FY01, FY02, and FY03.

JBPDS Block II Spiral development effort initiated with government run concept analysis in FY00. MS B/Development Contract Award, FY04, and MS C, Low Rate Initial Production in FY07, and Full Rate Production in FY08. Concept analysis consists of modeling and simulation results given to one or more contractors for brassboard development and testing. A preferred design will be carried through System Development by a prime systems contractor. Throughout System Development, the program will advance biological point detection capabilities (smaller, lighter, lower power, dry detection technologies, etc.) for operational level systems, and spiral incremental improvements into the Block I production program as they become available.

IBADS In-house support and sustainment of rapid prototypes.

JBSDS This program will transition leading technologies from the Technology Transition (TT) Bio program and the Bio Standoff Defense Technology Objective (DTO) into the system development and demonstration phase of the JBSDS program. The program will conduct a rapid system integration phase to effect the earliest possible system fielding.

# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE  
**February 2002**

BUDGET ACTIVITY







**RDTE&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

PROJECT

**BJ5****D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4						
ABPDS																																		
System Field Test and Evaluation				3Q																														
CRP																																		
ITF-6A List Complete	>>												4Q																					
ITF-6B List Complete													1Q												4Q									
ITF 6C List Complete																		1Q												3Q				
IBADS																																		
Fielding Support	>>												4Q																					
JBPDS																																		
Engineering, Design and Test (EDT)	>>	2Q																																
Phase I Low Rate Initial Production (LRIP)				4Q																														
Pre Production Qualification Test (PPQT)/Operational Assessment (OA I)							3Q																											
Operational Assessment II (OA II)								4Q	1Q																									
Low Rate Initial Production (LRIP) Phase 2 Build									1Q												4Q													
Initial Operational Test and Evaluation (IOT&E)												4Q												2Q										
Block I First Unit Equipped															3Q	4Q																		



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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>BJ5</b>

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JBPDSBLK2																																
Initial Overarching Integrated Process Team (IT) Convened: February 18, 1999													1Q	2Q																		
Solicitation for EMD Contract													1Q	2Q																		
Milestone B															1Q																	
Brassboard Build															1Q	—	3Q															
Preliminary Design Review (PDR)																3Q	4Q															
Critical Design Review (CDR)																		3Q														
Engineering, Design, and Test (EDT)																		3Q	—	2Q												
Pre-Production Qualification Test (PPQT)																						3Q										
Operational Assessment																							4Q									
Milestone C																													1Q			
Low Rate Initial Production (LRIP) Contract Award																													1Q			
Initial Operational Test and Evaluation (IOT&E)																														4Q		
JBSDS																																
BLK I Tech Readiness Review												4Q																				
BLK I Milestone B													1Q																			
BLK I Competitive Test Fly-off													2Q																			

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DATE

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BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

BJ5

**D. Schedule Profile (cont):**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JBSDS (Cont)																																
Developmental Testing													3Q	4Q																		
Operational Testing													3Q	4Q																		
BLK I Milestone C																3Q																
Refurbish Prototypes																3Q																
Production																3Q	<div></div>			3Q												
First Unit Equipped (FUE)																4Q																
BLK II Concept Exploration													1Q	<div></div>			4Q															
Component Advanced Development																1Q	<div></div>			4Q												
BLK II Milestone B																			1Q													
System Development and Demo																			3Q	<div></div>										2Q		
Critical Design Review (CDR)																							2Q									
BLK II Developmental Test/Operational Test (DT/OT)																			4Q	<div></div>					3Q							
Milestone C																											3Q					
Low Rate Initial Production (LRIP)																											3Q	4Q				

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>BJ5</b>		

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
HW C - Purchase of Critical Reagent Products	MIPR	Naval Medical Research Institute, Bethesda, MD	C	513	200	Jan-01	208	Jan-02	309	Jan-03	0	1230	0
HW S - New HHA Development	C/CPFF	TBS	C	0	0	NONE	0	NONE	300	1Q FY03	0	300	0
JBPDS													
HW C - Initiate Improvements on Suite and Detector Design	MIPR	Hanscom AFB/MIT-Lexington, MA	F	0	1764	2Q FY01	0	NONE	0	NONE	0	1764	0
JBPDSBLK2													
HW C - Laser reliability	MIPR	Hanscom AFB/MIT-Lexington, MA	F	0	0	NONE	49	1Q FY02	0	NONE	0	49	0
JBSDS													
SW SB - System Integration	MIPR	TBS	U	0	0	NONE	0	NONE	3128	2Q FY03	0	3128	0
HW S - JBSDS LIDAR	C/CPFF	Fibertek, Inc., Herndon, VA	C	0	0	NONE	3868	2Q FY02	0	NONE	0	3868	0
Subtotal I. Product Development:				513	1964		4125		3737		0	10339	

Remarks:

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>BJ5</b>		

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
TD/D SB - Critical Reagent Product	MIPR	SBCCOM, APG, MD	U	400	100	Jan-01	100	Jan-02	300	Jan-03	0	900	0
IBADS													
ILS S - Continued Support of Fielded IBAD Systems	MIPR	NSWC, Dahlgren, VA	U	311	281	1Q FY01	309	1Q FY02	385	1Q FY03	0	1286	0
JBPDSBLK2													
ES S - Engineering Support	MIPR	Various		0	1087	1Q FY01	0	NONE	0	NONE	3123	4210	0
JBSDS													
ES S - Modeling and Simulation	MIPR	DSSW/Institute of Defense Analyses, Falls Church, VA	F	0	0	NONE	0	NONE	200	1Q FY03	0	200	0
TD/D S - Modeling and Test Support	MIPR	NSSC/Johns Hopkins University, Baltimore, MD	N	0	0	NONE	0	NONE	400	1Q FY03	0	400	0
Subtotal II. Support Costs:				711	1468		409		1285		3123	6996	

Remarks:

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

BJ5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CRP													
OTHT C - Maintain Critical Reagent Repositories	MIPR	SBCCOM, APG, MD	U	0	300	Jan-01	300	Jan-02	400	Jan-03	0	1000	0
OTHT C - Antigen Development	MIPR	Dugway Proving Ground, UT	U	108	163	Jan-01	190	Jan-02	338	Jan-03	0	799	0
JBPDS													
OTE C - Initiate and Complete IOT&E	MIPR	ATEC/AFOTEC, Washington, D.C.	U	0	0	NONE	6886	2Q FY02	2488	1Q FY03	0	9374	0
OTE S - Conduct Operational Assessment II	MIPR	AFOTEC, ATEC, and DPG, UT	U	0	3179	3Q FY01	0	NONE	0	NONE	0	3179	0
JBSDS													
DTE S - Developmental Testing I	MIPR	Dugway Proving Ground, UT	U	0	0	NONE	0	NONE	1454	2Q FY03	0	1454	0
DTE S - Developmental Testing I	MIPR	SBCCOM, APG, MD	U	0	0	NONE	0	NONE	500	2Q FY03	0	500	0
OTE S - Operational Testing I	MIPR	Dugway Proving Ground, UT		0	0	NONE	0	NONE	2000	3Q FY03	0	2000	0
Subtotal III. Test and Evaluation:				108	3642		7376		7180		0	18306	

Remarks: JBPDS - FY02 initiate Army IOT&amp;E and planning for AF, Navy, and MC IOT&amp;E. FY03 Complete Army, AF, Navy, and MC IOT&amp;E.

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>BJ5</b>		

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ABPDS													
PM/MS C - Program Manager Training	MIPR	USAMRIID, Fort Detrick, MD	U	3	0	NONE	0	NONE	0	NONE	0	3	0
CRP													
PM/MS S - Program Management/Program Manager Support	SS/CPFF	Camber Corporation, Huntsville, AL	C	192	334	Jan-01	324	Jan-02	440	Jan-03	0	1290	0
IBADS													
PM/MS S - Program Management/Program Manager Support	Various	JPO-BD, Falls Church, VA	U	17	17	1Q FY01	19	1Q FY01	18	1Q FY01	0	71	0
JBPDSBLK2													
PM/MS S - PM Support	PO		U	0	150	1Q FY01	0	NONE	0	NONE	0	150	0
JBSDS													
PM/MS S - Program Management/Management Support	Allot	JPO-BD, Falls Church, VA	U	0	0	NONE	333	2Q FY02	1800	1Q FY03	0	2133	0
PM/MS S - Program Management/Management Support	MIPR	SBCCOM, APG, MD	U	0	0	NONE	0	NONE	200	3Q FY01	0	200	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria VA	U	0	0	NONE	217	2Q FY02	0	NONE	0	217	0
Subtotal IV. Management Services:				212	501		893		2458		0	4064	

Remarks:

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)						DATE February 2002						
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev			PE NUMBER AND TITLE 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)				PROJECT BJ5					
TOTAL PROJECT COST:			1544	7575		12803		14660		3123	39705	
Project BJ5												
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>CA5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CA5      CONTAMINATION AVOIDANCE (EMD)	59268	71421	58341	17756	0	0	0	0	206786

**A. Mission Description and Budget Item Justification:**

**Project CA5 CONTAMINATION AVOIDANCE (EMD):** This EMD funding supports System Demonstration and Low Rate Initial Production (SD/LRIP) of an array of reconnaissance, detection, and identification equipment, and warning systems.

Efforts funded in this project are: (1) Joint Contaminated Surface Detector (JCSD), (2) Nuclear, Biological and Chemical Reconnaissance System (NBCRS) Block II, (3) Joint Chemical Agent Detector (JCAD), (4) Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD), (5) Joint Service Lightweight Nuclear, Biological and Chemical Reconnaissance System (JSLNBCRS), and (6) Joint Warning and Reporting Network (JWARN).

The JCSD will operate from host platforms and will detect chemical agents remotely on contaminated surfaces.

The JCAD program is developing a miniaturized, ruggedized, and portable point chemical agent detector that automatically and simultaneously detects, identifies, quantifies, and alerts in the presence of nerve, blister, and blood agents. JCAD will be used for aircraft, shipboard, wheeled vehicles, stand alone, and individual soldier applications. JCAD will replace the ACADA, CAM, ICAM and other legacy systems currently used by the individual services.

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		PROJECT <b>CA5</b>

The JCSD is a standoff system that will provide near-term instantaneous detection and identification of chemical agents at maximum vehicle speeds. The JCSD will replace the Double Wheel Sample System in the NBCRS Block II (IAV-NBCRS) and the JSLNBCRS.

The JSLNBCRS is a new lightweight NBC detection and identification system and will consist of a Base Vehicle (BV) equipped with hand-held, portable and mounted, current, and advanced NBC detection and identification equipment. The JSLNBCRS will provide on-the-move reconnaissance and surveillance in support of combat, combat support, and combat service support forces. There will be two variants of the JSLNBCRS: the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) variant and the Light Armored Vehicle (LAV) variant.

The JSLSCAD utilizing passive infrared technology, provides a first-time on-the-move automatic scanner and chemical stand-off detection capability to the Services. The JSLSCAD will replace the M21 Remote Standoff Chemical Agent Alarm (RSCAAL).

The JWARN will provide standard integration and analysis of NBC detection information with Command, Control, Communication, Computers, Information and Intelligence (C4I2) on the battlefield automating the NBC warning and reporting processes currently performed manually throughout the Services. The JWARN will collectively consist of Commercial Off the Shelf (COTS) materiel and JWARN software for C4I2. JWARN is being developed for deployment with NBC detectors in the following battlefield applications: combat and armored vehicles, tactical vehicles, vans, shelters, shipboard application, area warning, semi-fixed sites, and fixed sites. Block I was the initial acquisition and fielding of COTS and Government Off the Shelf (GOTS) software to standardize NBC warning and reporting throughout the Armed Forces. Block II will integrate NBC legacy and future detector systems, NBC Warning and Reporting Software Modules, and NBC battlespace Management Modules in the Joint Services C4I systems. Block III will investigate new NBC warning and reporting software technologies and developmental NBC detector/sensors. Block III will also investigate software changes to Service C4I systems.

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<p>The NBCRS is a dedicated system of nuclear and chemical detection and warning equipment, and biological sampling equipment integrated into a high speed, high mobility armored carrier capable of performing NBC reconnaissance on primary, secondary, or cross country routes throughout the battlefield. The NBCRS Block II improvement of the NBCRS will meet all of the requirements contained in the approved requirements document.</p> <p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 5930 JCAD - Continued hardware and software development of 110 breadboard prototype units at an average unit cost of \$40,667.</li> <li>• 3891 JCAD - Continued systems engineering and manufacturing development (EMD) for prototype units, and logistics planning.</li> <li>• 4314 JCAD - Continued integration of systems components.</li> <li>• 1085 JCAD - Initiated contractor engineering test and evaluation of breadboard prototype units. Continued planning for Government development tests, and began to modify test plans for operational testing to include Director, Operational Test &amp; Evaluation (DOT&amp;E) considerations.</li> <li>• 3767 JSLNBCRS - Built/integrated two M1113 HMMWV variants (average unit cost of \$1.5M each).</li> <li>• 7287 JSLNBCRS - Completed Developmental Test (DT) I for two M1113 HMMWV variants.</li> <li>• 1515 JSLSCAD - Initiated the integration for the Joint Service Lightweight Nuclear, Biological, Chemical Reconnaissance System (JSLNBCRS), CH-53 helicopter, and C-130 fixed wing test platforms.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>• 3800 JSLSCAD - Completed Engineering Design Test (EDT). Reviewed and modified system design to incorporate test review results.</li> <li>• 5900 JSLSCAD - Initiated the fabrication of 35 Production Qualification Testing/Initial Operational Test &amp; Evaluation (PQT/IOT&amp;E) test articles (\$100K each).</li> <li>• 9613 JSLSCAD - Initiated PQT/ IOT&amp;E which includes environmental extremes, shock and vibration, Electromagnetic Interference (EMI), Electromagnetic Pulse (EMP), agent, and shipboard, helicopter, airplane, and ground vehicle field testing.</li> <li>• 799 JSLSCAD - Initiated the preparation and review of technical data package and acquisition documentation.</li> <li>• 763 JWARN - Prepared documentation for start of System Development and Demonstration (SDD) effort. Finalized Block II Software Development Plan.</li> <li>• 8144 NBCRS Block II - Continued sensor suite engineering development and acquisition of detectors.</li> <li>• 100 NBCRS Block II - Initiated plans for Developmental Test and Evaluation (DTE).</li> <li>• 515 NBCRS Block II - Continued software development.</li> <li>• 1845 NBCRS Block II - Initiated design for assembly and integration of developmental detectors into vehicles.</li> </ul>		
<b>Total</b>	59268	
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b> PROJECT <b>CA5</b>	
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 3605 JCAD - Complete hardware and software development on 296 contractor EMD prototype units at an average unit cost of \$6,405.</li> <li>• 4161 JCAD - Continue systems engineering and logistics planning.</li> <li>• 3433 JCAD - Begin system integration of JCAD system components and user platforms.</li> <li>• 5677 JCAD - Complete contractor validation test and evaluation. Begin government development tests (DT) on 1,196 EMD units at an average unit cost of \$4,484. Continue to plan for government operational testing.</li> <li>• 1742 JCSD - Conduct initial systems engineering, software and hardware development, acquisition of sensor components, and logistics planning.</li> <li>• 700 JCSD - Conduct initial test planning for surface contamination analyses.</li> <li>• 4348 JSLNBCRS - Continue software and hardware engineering development and integration of commercial off the shelf, government off the shelf software/hardware, and non-developmental item software/hardware products to the maximum extent possible for HMMWV variant.</li> <li>• 3300 JSLNBCRS - Conduct system test and evaluation (HMMWV DT II/Limited User Team) at Dugway and Yuma Proving Grounds.</li> <li>• 3048 JSLNBCRS - Conduct LAV variant design/fabrication.</li> <li>• 2012 JSLNBCRS - Initiate Toxic Industrial Chemicals (TICs) and Toxic Industrial Materials (TIMs) software development for CBMS Block II transition to JSLNBCRS procurement.</li> <li>• 4334 JSLSCAD - Continue Production Qualification Testing and Initial Operational Test &amp; Evaluation (PQT/IOT&amp;E).</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
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<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1000 JSLSCAD - Continue technical data package and acquisition documentation for Milestone III. All program documentation will be reviewed and updated to support MS III. This includes: Acquisition Strategy, Acquisition Baseline, Performance Specifications, and Environment Assessment. In Process Review (IPR) package preparation and coordination is also included.</li> <li>• 1035 JSLSCAD - Initiate the review and preparation of technical manuals, logistics support, and training materials. All logistics documentation to include: Technical Manuals; Integrated System Support Plans; and Logistics Support Plans will be updated based on test results. In addition, Materiel Fielding Plans, fielding schedules, and platform integration guides will be prepared and approved.</li> <li>• 2400 JSLSCAD - Complete the fabrication of 35 Production Qualification Testing/Initial Operational Test &amp; Evaluation (PQT/IOT&amp;E) test articles (\$100K each). NOTE - Defense Emergency Response Fund (DERF), Initial Crisis Response - \$616K received for procurement of 4 JSLSCAD prototype systems and testing for utilization in the National Capital Region.</li> <li>• 12767 JWARN - Start Block II integration of NBC legacy and future detector systems. Develop NBC warning and reporting modules and battlespace management modules for use by Joint Services C4I2 systems.</li> <li>• 1422 JWARN - Conduct Block II Modeling and Simulation for compatibility with the Joint Effect Model (JEM).</li> <li>• 2124 JWARN - Conduct Block II system DT II for Key Performance Parameters/Operational Assessment.</li> <li>• 693 JWARN - Prepare integrated logistic support technical data.</li> <li>• 1875 NBCRS Block II - Conduct Modeling and Simulation (M&amp;S) of human factors.</li> </ul>		
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**FY 2002 Planned Program (Cont):**

- 5503 NBCRS Block II - Continue sensor suite engineering development and refurbish prototypes (four prototypes, estimated cost \$1.1M each).
- 2624 NBCRS Block II - Continue integration of developmental detectors into vehicles.
- 2411 NBCRS Block II - Begin warfighter operational capability assessment.
- 1207 SBIR - Small Business Innovative Research.

**Total** 71421

**FY 2003 Planned Program:**

- 2015 JCAD - Update developmental hardware and software based on contractor and government developmental testing.
- 5921 JCAD - Continue JCAD systems engineering and logistics planning.
- 4224 JCAD - Continue system integration supporting government developmental tests.
- 11328 JCAD - Continue government developmental test and evaluation. Continue government operational test planning and preparation.
- 1000 JSLNBCRS - Start DT I for LAV variant.
- 1780 JSLNBCRS - Complete development of TICs and TIMs software for CBMS Block II transition to JSLNBCRS procurement.
- 1200 JSLNBCRS - Conduct DT III for LRIP HMMWV variants.
- 4030 JSLNBCRS - Start IOT&E for LAVs and HMMWVs for full rate production/Milestone C .

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<p><b>FY 2003 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 10239 JSLSCAD - Complete Production Qualification Testing and Initial Operational Test &amp; Evaluation.</li> <li>• 2200 JSLSCAD - Complete technical data package and acquisition documentation for Milestone III. All program documentation will be reviewed and updated to support MS III. This includes: Acquisition Strategy, Acquisition Baseline, Performance Specifications, and Environment Assessment. In Process Review (IPR) package preparation and coordination is also included.</li> <li>• 2091 JSLSCAD - Continue the review and preparation of technical manuals, logistics support, and training materials. All logistics documentation to include: Technical Manuals, Integrated System Support Plans, and Logistics Support Plans will be updated based on test results. In addition, Materiel Fielding Plans, fielding schedules, and platform integration guides will be prepared and approved.</li> <li>• 7668 JWARN - Continue Block II integration of NBC legacy and future detector systems and conduct DT I/Operational Assessment for full system requirements.</li> <li>• 1000 JWARN - Start to prepare documentation for Block II MS C.</li> <li>• 2343 NBCRS Block II - Complete NBCRS sensor suite engineering development and conduct Interim Progress Review to begin Low Rate Initial Production phase.</li> <li>• 1302 NBCRS Block II - Complete Production Qualification Test (PQT) and Early User Test (EUT).</li> </ul> <p><b>Total</b>      58341</p>		
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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>CA5</b>	
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>
B96801 RADIAC - POCKET AN/UDR - 13	3035	1999	0	0	0	0	0	0	5034
G47101 JOINT WARNING & REPORTING NETWORK (JWARN)	9018	0	0	0	12194	15956	31916	Cont	Cont
JF0100 JOINT CHEM AGENT DETECTOR (JCAD)	0	0	6031	19411	20437	26991	30273	Cont	Cont
JX0002 CA SYSTEM FIELDING SUPPORT/SPARES	0	0	0	0	0	0	0	0	0
M98801 AUTO CHEMICAL AGENT ALARM (ACADA), M22	68877	591	1035	0	0	0	0	0	70503
MA0601 RECON SYSTEM, FOX NBC (NBCRS) MODS	57651	6312	16474	24295	25268	24931	997	Cont	Cont
MC0100 JT SVC LTWT NBC RECON SYS (JSLNBCRS)	0	0	28345	50623	66594	74019	81867	Cont	Cont
N00041 SHIPBOARD DETECTOR MODIFICATIONS	4696	4670	4673	0	0	0	0	0	14039
S02201 IMPROVED CHEMICAL AGENT MONITOR (ICAM)	18746	262	381	0	0	0	0	0	19389
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BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>CA5</b>																					
<b>B. <u>Other Program Funding Summary (Cont):</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 5%;"><u>FY 2001</u></th> <th style="width: 5%;"><u>FY 2002</u></th> <th style="width: 5%;"><u>FY 2003</u></th> <th style="width: 5%;"><u>FY 2004</u></th> <th style="width: 5%;"><u>FY 2005</u></th> <th style="width: 5%;"><u>FY 2006</u></th> <th style="width: 5%;"><u>FY 2007</u></th> <th style="width: 5%;"><u>To Compl</u></th> <th style="width: 5%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10327</td> <td style="text-align: center;">0</td> <td style="text-align: center;">15386</td> <td style="text-align: center;">23230</td> <td style="text-align: center;">39891</td> <td style="text-align: center;">44881</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> </tbody> </table>												<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	0	10327	0	15386	23230	39891	44881	Cont	Cont
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																					
S10801 JS LTWT STANDOFF CW AGT DETECTOR (JSLSCAD)	0	10327	0	15386	23230	39891	44881	Cont	Cont																					

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**C. Acquisition Strategy:**

**CBMS** Contract development and fabrication of prototype test hardware, contractor testing, integration by host platforms, and contract fabrication of production units. The CBMS Block I (PDRR phase) was developed under a task order contract with Bruker Industries. The system was type-classified as part of the P3I BIDS system. The CBMS Block II (EMD phase) was developed under an interagency agreement with Oak Ridge National Lab, with Orbital Sciences Corp as the main subcontractor. The system will be type classified as a component of the NBCRS Block II system (IAV-NBCRV) and the Joint Service Lightweight NBCRS system. A PDRR effort is being initiated to configure the system as a stand-alone system.

**JCAD** Program has a competitive engineering and manufacturing development (EMD) contract, with contractor validation testing on a specified set of EMD prototype units, and government developmental testing (DT) on an additional set of EMD prototype units. The contractor will conduct DT on EMD prototypes. MS C (LRIP) will follow DT. The Government will conduct OT using LRIP units. The Program Manager plans a sole source initial procurement contract award to the development contractor.

**JCSD** The JCSD program will award a sole source contract to ITT Industries, Albuquerque, NM for development, fabrication of prototype hardware, and system integration into host platforms.

**JSLSCAD** The JSLSCAD is a five year contract development effort with Intellitec of Deland, FL. Development includes ground, air, and sea based platforms. Three production follow-on options are planned. The first option is to refurbish the EMD test units. The second and third options are for initial and full scale production, respectively.

**JSLNBCRS** Competitive development and fabrication of prototypes. Continue System Development and Demonstration (SDD) phase and initiate LRIP for HMMWV platform integration.

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JWARN	Competitive contract for SDD development and integration of software for Block II. Conduct development and fabrication of hardware/interfaces; test prototypes; contractor/in-house testing; competitive contract fabrication of production units.	
NBCRS Blk II	The Nuclear Biological Chemical Reconnaissance System (NBCRS) Block II program consists of a sensor suite developmental effort, and a separate integration effort to improve the NBCRS detection and reporting capability. The design and development of the sensor suites is under contract to CACI Technologies, Inc. Contract is a single year with four option years, cost plus fixed fee (CPFF) contract. Integration of the sensor suite and vehicle production following an Initial Production In-Process Review (IPR) is under contract to General Motors (GM) General Dynamics Land System (GDLS) LLC, Inc.	
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<b>D. <u>Schedule Profile:</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
CBMS																																
Block II - Engineering Tests	>>	————— 3Q																														
JCAD																																
EMD Prototype Fabrication/Test	>>	————— 2Q																														
Contractor Validation Test									2Q	——— 4Q																						
Government Development Test												4Q	——— 3Q																			
Milestone C Low Rate Initial Production (LRIP) Decision																4Q																
Low Rate Initial Production (LRIP)/Operational Test															4Q	——— 4Q																
Full Rate Production Decision																				4Q												
JCSD																																
System Engineering, Software, and Hardware Development												2Q	——— 4Q																			
Test Planning												2Q																				
JSLNBCRS																																
Milestone B								3Q																								
Development Testing II (HMMWV)												2Q	3Q																			
Limited User Test (LUT) (HMMWV)												3Q																				

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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JSLNBCRS (Cont)																																
Milestone C Low Rate Initial Production (LRIP)												4Q																				
Low Rate Initial Production (LRIP) for High Mobility Multipurpose Wheeled Vehicle (HMMWV)													1Q	—————			2Q															
Engineering Developmental Test (EDT) (LAV)												4Q																				
Initial Operational Test and Evaluation (IOT&E) for High Mobility Multipurpose Wheeled Vehicle (HMMWV) and the LAV															4Q	———		2Q														
Milestone C Full Rate Production (FRP)																	3Q	4Q														
JSLSCAD																																
Fabricate Engineering, Design, and Test (EDT) Units				>> 2Q																												
Conduct Engineering Test			2Q	—————		3Q																										
Production Qualification Test (PQT)/Initial Operational Test and Evaluation (IOT&E)											3Q	—————			4Q																	
Complete test and operational documentation															4Q																	

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<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JSLSCAD (Cont)																																
Joint Service Milestone III In Process Review (IPR)																2Q																
JWARN																																
JWARN BLOCK II System Development and Design (SDD) Contract Award											2Q																					
Developmental Test I (DT I)/Operational Assessment (Core Capabilities)															2Q																	
DT- II/Operational Assessment (Full Capabilities)																			3Q													
Milestone C - Block II Low Rate Initial Production (LRIP)																				4Q												
Low Rate Initial Production (LRIP) Contract Award																				1Q												
Production Contract Option																				2Q												
NBCRSBLKII																																
R&D Contract Award				2Q																												
Fabricate Engineering Prototypes								3Q	—————						2Q																	
Production Qualification Test															3Q	———				1Q												

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DATE \_\_\_\_\_

February 2002

## BUDGET ACTIVITY

## RDT&E DEFENSE-WIDE/

## BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

**CA5**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NBCRSBLKII (Cont)																																
Block II Initial Production IPR - Milestone C																	1Q															
Block II Production Verification Test																					1Q				4Q							

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CA5</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCAD													
HW/SW Development	C/CPAF	BAE SYSTEMS Inc, Austin, TX	C	14237	12406	Nov-00	10346	Nov-01	9697	Nov-02	0	46686	0
JCSD													
HW S - Systems engineering and hardware development	SS/CPFF	ITT Industries, Albuquerque, NM	C	0	0	NONE	1642	3Q FY02	0	NONE	0	1642	0
JSLNBCRS													
HW C - COTS/GOTS Hardware/Software Integration	C/FP	TRW, Sierra Vista, AZ	C	0	0	NONE	3696	Nov-01	0	NONE	0	3696	0
JSLSCAD													
SW S - Develop Software	C/CPFF	Intellitec, DeLand, FL	C	10500	3975	Nov-00	500	Nov-01	1351	Nov-02	0	16326	11095
JWARN													
SW S - JWARN SSD Contract	C/FPI	TBS	C	0	0	NONE	12100	Mar-02	6668	Mar-03	0	18768	0
NBCRSBLKII													
HW S - NBCRS Sensor Suite Engineering Development; Fabricate Prototypes; Complete Development	C/CPFF	CACI Technologies Inc, Manassas, VA	C	1357	3240	Dec-00	4667	Dec-01	1303	Dec-02	0	10567	16401
SW SB - Provide Sensor Suite Hardware	MIPR	PM NBCDS, APG, MD	U	2000	5553	Dec-00	2234	Dec-01	0	NONE	0	9787	5865
Subtotal I. Product Development:				28094	25174		35185		19019		0	107472	
Project CA5													
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Exhibit R-3 (PE 0604384BP)													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDTE&E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev	0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)	CA5
<p>I. Product Development - Cont.</p> <p>Remarks: JSLSCAD - HW S - FY02 complete PQT articles. SW S - FY00 develop software: 15 EDT articles; 35 PQT/IOTE articles (\$100,000 each). FY03 complete software. FY02 information changed due to contract schedule extension and Acquisition Program Baseline (APB) update. Significant delays in hardware delivery, test cost growth, and the resultant schedule extension have resulted in the need to realign FY02 JSLSCAD production funds.</p> <p>NBCRS Blk II - HWS - FY00-FY03 sensor suite engineering development. FY02 prototype fabrication (four prototypes, estimated cost \$1.1M each). FY03 - complete development. HW GFPP - FY01 &amp; FY02 provide sensor suite components to include Chemical Biological Mass Spectrometer (CBMS) and Joint Service Lightweight Chemical Agent Detector (JSLSCAD) to contractor - four each.</p>		

Project CA5

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Exhibit R-3 (PE 0604384BP)

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CA5</b>		

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCAD													
Technical Data and Logistics Support	MIPR	Various	U	840	150	Nov-00	198	Nov-01	202	Nov-02	0	1390	0
JSLNBCRS													
ES C - CSS Support	C/FP	Sverdrup, Dumfries, VA	C	0	1000	Dec-00	400	Dec-01	400	Nov-02	0	1800	0
HW C - Integration contract	C/FFP	TRW, Carson, CA	C	7550	9179	Mar-01	2012	Mar-02	1780	Mar-03	0	20521	0
JSLSCAD													
TD/D SB - JSLSCAD Evaluation of Engineering Changes	MIPR	APG, MD; DPG, UT; PNAS, Patuxent, MD	U	200	390	Nov-00	480	Nov-01	80	Nov-02	0	1150	870
TD/D SB - JSLSCAD ILS Analysis and Documentation	MIPR	APG, MD; DPG, UT; PNAS, Patuxent, MD	C	1400	165	Nov-00	950	Nov-01	575	Nov-02	0	3090	2315
TD/D SB - JSLSCAD Technical Manuals and Documents	MIPR	APG, MD; DPG, UT; PNAS, Patuxent, MD	C	600	20	Nov-00	120	Nov-01	650	Nov-02	0	1390	650
JWARN													
ES S - Modeling and Simulation	MIPR	SBCCOM, APG, MD	U	0	0	NONE	1422	Mar-02	0	NONE	0	1422	0
ILS S - Prepare Technical Data	C/FFP	Sverdrup, Dumfries, VA	C	0	0	NONE	566	Mar-02	0	NONE	0	566	0
ILS S - Prepare Technical Data	C/FFP	Sverdrup, Dumfries, VA	C	0	0	NONE	127	Dec-01	0	NONE	0	127	0
Subtotal II. Support Costs:				10590	10904		6275		3687		0	31456	
Remarks:													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CA5</b>		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCAD													
DTE S - JCAD Developmental Testing (DT)	MIPR	Various Govt	U	3176	1473	Mar-01	5678	Jan-02	11329	1Q FY03	0	21656	0
JCSD													
Initial Test Design and Planning	PO	SBCCOM, APG, MD	U	0	0	NONE	700	2Q FY02	0	NONE	0	700	0
JSLNBCRS													
OTHT SB - Conduct Limited User Test of HMMWV	MIPR	Various	U	0	0	NONE	2400	Nov-01	900	Nov-02	0	3300	0
DTE S - HMMWV Variant DT- II	MIPR	Various	U	0	0	NONE	3600	Dec-01	0	NONE	0	3600	0
DTE S - HMMWV Variant DT- III	MIPR	Various	U	0	0	NONE	0	NONE	1000	Nov-02	0	1000	0
OTE C - LAV and HMMWV IOT&E	MIPR	Various	U	0	0	NONE	0	NONE	3330	Jun-03	0	3330	0
JSLSCAD													
OTHT C - 100/200 CFM Gas Filter - Live Agent Testing	MIPR	APG, MD; DPG, UT; PNAS, Patuxent, MD	U	7200	1250	Nov-00	1000	Nov-01	0	NONE	0	9450	8268
OTHT SB - JSLSCAD PQT/IOTE and Integration Test	MIPR	APG, MD; DPG, UT; PNAS, Patuxent, MD	U	1100	4237	Nov-00	3539	Nov-01	5980	Nov-02	0	14856	9767
OTHT SB - Engineering Design Test, and PQT and IOT&E Support	MIPR	APG, MD; DPG, UT; PNAS, Patuxent, MD	C	1500	2300	Nov-00	300	Nov-01	1000	Nov-02	0	5100	3464
OTE S - Design and Build Test Hardware	C/CPFF	Intellitec, DeLand, FL	C	28000	8000	1Q FY01	1500	1Q FY02	3594	1Q FY03	0	41094	0
JWARN													
DTE C - DT I /Operational Assessment Core Requirements.	MIPR	MCSC, Quantico, VA	U	0	0	NONE	1392	Apr-02	0	NONE	0	1392	0
<div>Project CA5</div> <div>Page 38 of 113 Pages</div> <div>Exhibit R-3 (PE 0604384BP)</div>													

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

CA5

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DTE C - DT I /Operational Assessment Core Requirements.	MIPR	Various	U	0	0	NONE	324	Jul-02	0	NONE	0	324	0
OTHT SB - DT II /Operational Assessment Full requirements.	MIPR	Various	U	0	0	NONE	0	NONE	600	Jun-03	0	600	0
NBCRSBLKII													
OTE S - Support PQT/Early User Test	Various	PM NBCDS, APG, MD	U	0	0	NONE	2160	Dec-01	492	Dec-02	0	2652	3244
OTE SB - Modeling and Simulation (M&S)	PO	CACI Technologies Inc., Manassas, VA	C	0	0	NONE	1632	Dec-01	0	NONE	0	1632	1632
Subtotal III. Test and Evaluation:				40976	17260		24225		28225		0	110686	

Remarks: NBCRS Blk II - OTE S - FY02 includes assembly of four sensor suites (\$800K per suite). Components purchased over several years.

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY <b>RDTE&amp; DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CA5</b>		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JCAD													
PM/MS SB - Joint Service Support	MIPR	Various - Government/Contractor Support	U	2861	1191	Nov-00	654	Nov-01	2260	1Q FY03	0	6966	0
JCSO													
PM/MS C - Core team support	PO	PM NBCDS, APG, MD	U	0	0	NONE	100	Mar-02	0	NONE	0	100	0
JSLNBCRS													
PM/MS C - Joint Service IPT Support	MIPR	Various	U	0	875	Mar-01	600	Nov-01	600	Nov-02	0	2075	0
JSLSCAD													
PM/MS S - JSLSCAD - Core Team Salaries and Other Government Agencies Support Through Milestone III IPR.	PO	APG, MD; DPG, UT; PNAS, Patuxent, MD	U	2000	1290	Nov-00	380	Nov-01	1300	Nov-02	0	4970	2580
JWARN													
PM/MS C - Joint IPT Support	MIPR	Various	U	826	763	1Q FY01	1075	Nov-02	1400	Nov-03	0	4064	0
NBCRSBLKII													
PM/MS S - Engineering Management	Various	PM NBCDS, APG, MD	U	809	1811	Dec-00	1720	Dec-01	1850	Dec-02	0	6190	4197
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	1207	2Q FY02	0	NONE	0	1207	0
Subtotal IV. Management Services:				6496	5930		5736		7410		0	25572	
Project CA5													
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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)						DATE February 2002		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>			PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>CA5</b>	
IV. Management Services - Cont. Remarks: NBCRS Blk II - Salaries and Other Government Agencies (OGAs).								
TOTAL PROJECT COST:			86156	59268	71421	58341	0	275186
Project CA5								

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>CM5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CM5      WMD - CIVIL SUPPORT TEAM (EMD)	0	0	1000	1000	14500	400	0	0	16900

**A. Mission Description and Budget Item Justification:**

**Project CM5 WMD - CIVIL SUPPORT TEAM (EMD):** Program funds the development of the Unified Command Suite (UCS) and Mobile Analytical Laboratory Platform (MALS) Block upgrades. This funding profile provides the resources for the modernization to address the WMD CSTs objective operational capabilities, the Reserve Component (RC) Recon, and the RC Decon Teams and provide funds for. It provides full funding for: (1) type-classified protection, detection, and training equipment; (2) development and fielding of upgraded analytical platforms for the detection, identification, and characterization of chemical, biological, and radiological agents used by terrorists in a civilian environment; (3) development and fielding of communication capabilities that are interoperable with other-federal, state, and local agencies; (4) testing and evaluation to ensure that the systems fielded are safe and effective; and (5) program management funds to successfully execute the Consequence Management RDA program. WMD CSTs and U.S. Army Reserve Reconnaissance and Decontamination Teams would receive the systems developed and procured under this program in accordance with the Joint Service Agreement for Chemical and Biological Defense Program Management.

**FY 2001 Accomplishments: None**

**FY 2002 Planned Program: No planned program**

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>CM5</b>				
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 500 WMD CST- Initiate Development of Unified Command Suite (UCS) and Mobile Analytical Laboratory (MALS) Block upgrades.</li> <li>• 500 WMD CST - Support and planning for upgrade program.</li> </ul> <p><b>Total</b>          1000</p>												
<b>B. <u>Other Program Funding Summary:</u></b>				<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>
CM6 WMD - CIVIL SUPPORT TEAM (MANAGEMENT SUPPORT)				0	0	1600	1600	1600	1600	1600	Cont	Cont
JA0004 WMD - CIVIL SUPPORT TEAM EQUIPMENT				2046	0	18959	8000	3047	44300	1600	Cont	Cont
Project CM5				Page 43 of 113 Pages				Exhibit R-2 (PE 0604384BP)				



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>CM5</b>
<p><b>C. <u>Acquisition Strategy:</u></b> This program utilizes multiple acquisition vehicles: 1) Funds the acquisition of chemical, nuclear, and biological defense equipment as outlined in the Reserve Components (RC) Weapons of Mass Destruction (WMD) Plan. Equipment purchased through existing contract vehicles; 2) Uses existing contract vehicles to design and develop new mobility platform for MALS that displaces interim DAP and legacy MALS, field, and produce them; 3) Conduct OT&amp;E of entire WMD CST in FY03; 4) Initiate Block I upgrades in FY03 of UCS and MALS to incorporate technology insertion via contracts, conduct Development Testing (DT) &amp; Initial Operational Test and Evaluation (IOTE) of prototype systems, and produce block upgrades; 5) Continue evaluation of existing and new COTS equipment to incorporate into the Table of Distribution and Allowances (TDA) to meet increasing requests; and, 6) Refurbish Reserve Component (RC) type-classified CB equipment.</p>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>CM5</b>

<b>D. <u>Schedule Profile:</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
WMD CST																																
Development Block I upgrades of Universal Command Suite (UCS) & Mobile Analytical Lab System (MALS)																																

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# CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

CM5

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
HW S - Development Blk I Upgrades UCS and MALS	C/CPFF	TBS	C	0	0	NONE	0	NONE	950	2Q FY03	0	950	0
Subtotal I. Product Development:				0	0		0		950		0	950	

Remarks:

II. Support Costs: Not applicable

III. Test and Evaluation: Not applicable

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CM5</b>		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WMD CST													
PM/MS S - Management Services	PO	PM NBCDS, SBCCOM, APG, MD	U	0	0	NONE	0	NONE	50	1Q FY03	0	50	0
Subtotal IV. Management Services:				0	0		0		50		0	50	
Remarks:													
TOTAL PROJECT COST:					0	0		0		1000		0	1000

Project CM5

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>CO5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CO5 COLLECTIVE PROTECTION (EMD)	3137	3987	4301	4143	4207	4239	4718	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CO5 COLLECTIVE PROTECTION (EMD):** This EMD funding supports System Demonstration and Low Rate Initial Production (SD/LRIP) of Joint Service Nuclear, Biological & Chemical (NBC) collective protection systems that are smaller, lighter, less costly to build and maintain, and more logistically supportable to enable mission accomplishment in NBC environments. Collective protection platforms include shelters, vehicles, ships, aircraft, buildings, and hospitals. As Techbase Non-Medical Collective Protection efforts become mature, they will be transitioned into the following EMD efforts.

Systems funded under this project are: (1) Shipboard Collective Protection Equipment (SCPE), (2) Joint Collective Protection Equipment (JCPE), and (3) Chemical Biological Protective System (CBPS) P3I.

The SCPE program provides an NBC free environment within specified zone boundaries of high priority ships by over pressurization with filtered air. Two of the major goals of this program is to develop a high efficiency, quiet Collective Protection System (CPS) fan rotor, and extend the service life of shipboard High Efficiency Particulate Air (HEPA) filters. Current efforts are focused on extending the service life of HEPA filters from three years to four years. The program will continue testing of collective protection system components that decrease Total Ownership Costs (TOC), reduce shipboard maintenance requirements, and provide energy-efficient equipment.

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>CO5</b>
<p>The JCPE program will provide needed improvements and cost saving standardization to currently fielded systems. Standardization of individual system components (specifically filter systems) across Joint Service mission areas will reduce logistics burden while maintaining the industrial base. JCPE will focus on fixing specific problems and deficiencies with currently fielded CPS equipment designated high priority by each service. JCPE provides improvements to current fixed site, building, shipboard, and vehicle collective protection systems. JCPE's efforts on portable shelters are limited to providing an interim capability. JCPE will specifically insert off-the-shelf technologies into these older systems to: (1) solve reliability, maintainability, and operational problems, (2) significantly reduce manufacturing and/or operating costs, (3) solve previously unmet requirements, and (4) provide improved interim capabilities.</p> <p>The CBPS-P3I will improve the operational suitability and reliability of the CBPS for light divisions that is currently in production. This phase of the P3I will develop a self-sustained Environmental Support System (ESS) that does not require the HMMWV engine for power resulting in reduced fuel consumption, vehicle maintenance and sustainment costs. To improve operational capability, the resulting weight reductions will be implemented to allow more medical equipment to be transported inside the CBPS. Improvements will be made to the CB tent using lightweight, low cost CB materials being developed in R&amp;D. All these improvements will be available for incorporation into the CBPS production line in FY05 following a Production Verification Test. It will also provide a capability to address the critical need for collective protection within Level 1 and 2 Heavy and Airborne units. Currently, no capability exists to provide medical treatment in a CB contaminated environment for these types of units. The self-sustained ESS and CB tent of CBPS-light will be used to maximize commonality of components. These components will be integrated onto platforms suitable for Airborne and Heavy divisions. The CBPS P3I will have three phases: Phase 1: Develop design concepts and fabricate prototype ESS; Phase 2: Fabricate two ESS prototypes for integration onto each of three CBPS platforms; and Phase 3: Integrate ESS modules onto platforms for use in Light, Heavy and Airborne prototype systems.</p>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>CO5</b>
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>1234 JCPE - Completed development and testing of 20 improved 200 Cubic Feet per Minute (CFM) particulate filters to reduce logistics costs. Performed development and testing of Fixed Installation Filter (FIF) packaging and housing improvements to reduce costs, production time, and waste. Completed development of 100/200 CFM gas filter improvements to extend filter life and reduce manufacturing and logistics costs. Initiated development and testing of a pleatable charcoal/HEPA bonded filter to replace two chemical/biological (CB) filters used in collective protection systems to reduce installation time, logistics, and cost.</li> <li>1221 JCPE - Initiated development and testing of the Filter Fan Assembly (FFA) 400-100 and M93 Modular Collective Protection Equipment (MCPE) candidate motorblowers for CB shelter systems to improve efficiency, reliability, size, and weight. Continued development and testing of a modified Environmental Control Unit (ECU) for Expeditionary Medical Support (EMEDS) to allow rapid deployment of a reduced weight and size unit. Prepared technical drawings for Integrated Logistics Support (ILS) for the Bump Through Door (BTD) airlock modification to the transportable collective protection systems and Medical Systems. Performed development and testing of a prototype one-piece 32-foot liner, 8-foot extension and vestibules for use in the Small Shelter System to provide the Air Force EMEDS system with collective protection capability. Completed market surveys and evaluated systems capable of meeting the Operational Requirements Document (ORD) for a Chemically/biologically Hardened Air Transportable Hospital (CHATH) transportable latrine system for use with EMEDS.</li> </ul>		
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>CO5</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>682 SCPE - Completed land-based and initiated shipboard testing of two improved CPS fan rotors. Based on test results, continued to define CPS fan rotor performance specification. Shipboard testing was required to verify actual noise reduction in a fan room and adjacent manned spaces on board a ship. Improved CPS fan rotor increased efficiency and reduced noise levels by 12 to 17 decibels. Completed second year of verification testing to validate the four-year performance of improved prefilters and High Efficiency Particulate, Air (HEPA) filters. Completed testing of nine V-cell (mini-pleat) Limited Protection (LP) HEPA filters. Initiated shock and vibration testing on four commercial off the shelf (COTS) LP HEPA filters. Transitioned COTS LP HEPA filter to JCPE for further development. Performed literature search and developed a table listing the performance of shipboard CPS HEPA filters versus high threat Toxic Industrial Chemicals/Toxic Industrial Materials (TICs/TIMs), leveraging data from techbase non-medical efforts. Initiated development and testing of two electronic differential pressure gauges for remote reading to improve shipboard CPS maintenance by accurately measuring the pressure differential.</li> </ul>		
<b>Total</b>	3137	
<div>Project CO5</div> <div>Page 51 of 113 Pages</div> <div>Exhibit R-2 (PE 0604384BP)</div>		



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BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>CO5</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 227 CBPS P3I - Initiate design concept for CBPS airborne and heavy versions. Coordinate with user and field representatives on requirements and logistics supportability. Develop Scope of Work for design and fabrication of Environmental Support System (ESS). Initiate and manage CBPS P3I program.</li> <li>• 559 CBPS P3I - Award Delivery Order on existing services contract for design and fabrication of a self-powered ESS that will meet the requirements for CBPS-light, heavy, and airborne versions. Fabricate one ESS prototype and develop a limited Technical Data Package. (Estimated cost \$250K.)</li> <li>• 1134 JCPE - Initiate development and testing of 2000 CFM particulate filters to reduce logistics costs. Initiate testing of ten improved 100/200 CFM gas filters with live agents to complete qualification of filter design. Complete development and testing of a pleatable charcoal/HEPA bonded filter to replace two CB filters used in collective protection systems to reduce installation time, logistics, and cost.</li> <li>• 678 JCPE - Perform market studies to investigate improving efficiency of shipboard CPS supply fan motors to allow the CPS system to operate at peak performance over the entire range of filter loading. Complete development and testing of FFA 400-100 and M93 MCPE candidate motorblowers for CB shelter systems to improve efficiency, reliability, size, and weight.</li> <li>• 618 JCPE - Complete development and testing of a modified ECU for EMEDS to allow rapid deployment of a reduced weight and size unit. Initiate development of a modified M28 liner for large capacity shelters.</li> </ul>		
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BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>CO5</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>703 SCPE - Continue shipboard testing of improved CPS fan rotor. Shipboard testing is required to verify actual noise reduction in a fan room and adjacent manned spaces on board ship. Use test data to revise CPS fan rotor performance specification. Improved CPS fan rotors will increase efficiency and reduce noise levels by 12 to 17 decibels. Complete third year of verification testing to validate the four-year performance of improved prefilters and HEPA filters. Begin testing and evaluation of HEPA filter performance degradation after TIC/TIM exposure. Continue development and testing of two electronic differential pressure gauges for remote reading to improve shipboard CPS maintenance.</li> <li>68 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	3987	
<div> <div>Project CO5</div> <div>Page 53 of 113 Pages</div> <div>Exhibit R-2 (PE 0604384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>CO5</b>

**FY 2003 Planned Program:**

- 829 CBPS P3I - Fabricate two ESS prototypes at unit cost of \$250K and finalize design and limited Technical Data Package.
- 200 CBPS P3I - Conduct performance testing on one ESS prototype.
- 400 CBPS P3I - Finalize design concepts for CBPS light, heavy and airborne applications. Obtain and initiate modification of heavy and airborne platforms for integration. Manage CBPS P3I.
- 1164 JCPE - Complete development of 2000 CFM particulate filters to reduce logistics costs. Initiate development of a modified impingement filter for ships to reduce cost of filter, maintenance, and logistics. Complete live agent testing of improved 100/200 CFM gas filters. Complete development and testing of ten improved 100/200 CFM gas filters to provide TIC protection. Initiate development and testing of 10 modified 100/200 CFM gas filters to provide TIC protection.
- 562 JCPE - Based on market study, perform development and testing to increase efficiency of CPS supply fan motors to operate at peak performance over the entire range of filter loading.
- 462 JCPE - Initiate development and testing of an integrated collective protection (CP) power transfer kit for Transportable Collective Protection System (TCPS). Complete development of a modified M28 liner for large capacity shelters.
- 684 SCPE - Complete shipboard testing of improved CPS fan rotors. Test data will be used to revise CPS fan rotor performance specification. Complete final year of verification testing to validate the four-year performance of improved prefilters and HEPA filters. Complete testing and evaluation of HEPA filter performance degradation after TIC/TIM exposure. Complete development and testing of two electronic differential pressure gauges for remote reading to improve shipboard CPS maintenance.

**Total** 4301

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>CO5</b>
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
JCP001 COLLECTIVELY PROTECTED DEPLOYABLE MEDICAL SYSTEM	5879	2996	1094	0	0	0	0	0	9969
JF0102 TRANSPORTABLE COLLECTIVE PROT SYS	3588	0	0	0	0	0	0	0	3588
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	5379	2312	3186	0	0	0	0	0	10877
JN0014 COLLECTIVE PROT SYS AMPHIB BACKFIT	17627	17710	17347	19425	18796	11369	7580	Cont	Cont
JN0017 JOINT COLLECTIVE PROTECTION EQUIPMENT	1038	2378	1377	1927	2235	2095	1846	Cont	Cont
R12301 CB PROTECTIVE SHELTER (CBPS)	11308	24522	14931	15524	14135	16669	30517	Cont	Cont
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BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>CO5</b>

**C. Acquisition Strategy:**

**CBPS/P3I**      An up-front analysis will be performed to develop design concepts for Heavy and Airborne versions of CBPS. This development will support the P3I requirement in the ORD for a capability to provide medical treatment in a CB environment in these Divisions. The CBPS ORD also addresses the need for a P3I to develop a self-sustained Environmental Support System (ESS) for the current version of CBPS that does not require the High Mobility Multi-Purpose Wheeled Vehicle (HMMVW) engine for primary power. The Government will serve as the prime contractor for integration to reduce total program costs. Existing Service Support Contract will be used to develop and fabricate ESS prototypes suitable for CBPS light, heavy and airborne versions. The ESS prototype will be subjected to performance and reliability testing and the design finalized. Other weight and durability improvements will be investigated and evaluated on the current CBPS. Three ESS prototypes will be fabricated. One ESS will be integrated with the current version of CBPS and validated for use through a Production Verification Test. The ESS and other improvements will be integrated into the existing CBPS production line in FY05. The other two ESS prototypes will be integrated onto platforms determined to be suitable for Heavy and Airborne applications and required operational tests conducted.

**JCPE**      This program will utilize the modification clause under DOD 5000 to provide solutions to current deficiencies in fielded collective protection equipment. The various efforts under JCPE will leverage techbase efforts, market analysis, and trade-off studies to determine the optimum configuration for any modifications or improvements. All modified components will be contractor fabricated and in-house/contractor tested to ensure performance compatibility. Performance and/or procurement specifications will be updated to ensure that modifications are included in future acquisitions. Modified components will be integrated into existing systems via field modification or replacement spares.

**SCPE**      In-house/contract design, fabrication, and testing of prototype components. Performance specifications of initial fans, motors, and filters will be updated to ensure that modifications are included in future acquisitions.

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>CO5</b>

<b>D. <u>Schedule Profile:</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
CBPS																																
BLK I Milestone A Decision									3Q				3Q																			
CBPS P3I- Award Contract Option to Fabricate Two ESS													1Q			4Q																
CBPS P3I- Conduct Performance Testing													3Q																			
CBPS P3I- Integrate and Fabricate Light, Heavy and Airborne CBPS Prototypes																	1Q	2Q														
CBPS P3I- Develop Technical Data Package and ILS for all Versions																	1Q				4Q											
CBPS P3I- Conduct Developmental and Production Verification Testing (Light Version only)																	2Q	3Q														
CBPS P3I- Integrate into Production (Light Version only)																			2Q													
CBPS P3I- Fabricate/Integrate Heavy/Airborne Versions (one each)																			1Q	2Q												
CBPS P3I- Perform Operational Test of Heavy/Airborne Versions																					4Q											

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>CO5</b>

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CBPS (Cont)																																
CBPS P31- Conduct Developmental and Production Verification Testing (Light Version only)																											2Q					
JCPE																																
Develop Modified M28 Liner for MGPTS	1Q			4Q																												
Develop & Test FIF Packaging and Housing Improvements	1Q								1Q																							
Develop & Test Improved 200 CFM Particulate Filter	1Q							4Q																								
Develop & Test Modified Environmental Control Unit for EMEDS	1Q											2Q																				
Develop Improved 100/200 CFM Gas Filters	1Q							4Q																								
Prepare Technical Drawings for Bump Through Doors (BTDs)					1Q			4Q																								
Develop & Test Modified M28 Liner for EMEDS					1Q			4Q																								
Market Survey & Testing of CP Latrine for EMEDS					1Q			4Q																								

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# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

CO5

**D. Schedule Profile (cont):**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JCPE (Cont)																																
Develop & Test Pleatable Charcoal/High Efficiency Particulate Arresting (HEPA) Bonded Filter					1Q							4Q																				
Develop & Test FFA400-100 and M93 MCPE					1Q							4Q																				
Market Study to Increase Efficiency of Shipboard CPS Supply Fan motors									1Q			4Q																				
Agent Testing of 100/200 CFM Gas Filters									1Q							4Q																
Develop Modified M28 Liner for Large Capacity Shelters									1Q							4Q																
Develop & Test 2000 CFM Particulate Filters									1Q							4Q																
Develop & Test Efficiency Improvement to Shipboard CPS Supply Fan Motors													1Q			4Q																
Develop & Test Integrated CP Power Transfer Kit for TCPS													1Q			4Q																
Develop & Test Modified 100/200 CFM Gas Filters for TIC's.													1Q							4Q												



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DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

CO5

**D. Schedule Profile (cont):**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JCPE (Cont)																																
Develop & Test Modified Impingement Filter for Ships													1Q																			
SCPE																																
Fan Testing & Evaluation (Land-based)	>>																															
Define CPS Fan Performance Specification		2Q																														
Fan Testing & Evaluation (Shipboard)						1Q																										
Develop and Test Electronic Differential Pressure Gauge						1Q																										
CPS Filter TICs/TIMs Evaluation						1Q																										

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2002		
BUDGET ACTIVITY <b>RDTE&amp; DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CO5</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CBPS													
HW SB - Contractor Hardware Development	C/CPFF	TBS	C	0	0	NONE	559	May-02	829	Dec-02	0	1388	0
JCPE													
HW SB - 200 CFM Particulate Filter - Market Survey of Media	WR	NSWCDD, Dahlgren, VA	U	305	185	Dec-00	0	NONE	0	NONE	0	490	490
HW SB - FIF - Engineering & Prototype Development	MIPR	SBCCOM, Edgewood, MD	U	163	122	Dec-00	0	NONE	0	NONE	0	285	285
HW SB - 100/200 CFM Gas Filter - Market Survey & Prototype Development	MIPR	SBCCOM, Edgewood, MD	U	484	460	Dec-00	0	NONE	0	NONE	0	944	944
HW SB - Pleatable Charcoal/HEPA Bonded Filter - Development	MIPR	SBCCOM, Edgewood, MD	U	0	192	Dec-00	50	Dec-01	0	NONE	0	242	242
HW SB - Improved FFA 400-100 & M93 MCPE Motorblower - Market Survey & Prototype Development	MIPR	SBCCOM, Edgewood, MD	U	338	192	Dec-00	200	Dec-01	0	NONE	0	730	730
HW SB - Modified ECU for EMEDS Development and Engineering	MIPR	Various	U	213	68	Dec-00	0	NONE	0	NONE	0	281	281
HW SB - EMEDS Development Modified M28 Liner	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	243	Dec-00	0	NONE	0	NONE	0	243	243
HW SB - CP Latrine for EMEDS - Market Survey	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	113	Dec-00	0	NONE	0	NONE	0	113	113
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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev					PE NUMBER AND TITLE 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)						PROJECT CO5		
I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HW C - 2000 CFM Particulate Filter - Market Survey and Improvements	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	226	Dec-01	100	Dec-02	0	326	326
HW C - Modified Impingement Filter for ships - Market Survey and Improvements	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	50	Dec-02	50	100	100
HWSB - Modified 100/200 CFM Filter for TIC - Development & Engineering	MIPR	ECBC, Edgewood, MD	U	0	0	NONE	0	NONE	150	Dec-02	23	173	173
HW C - Shipboard CPS Supply Fans - Market Survey	WR	NSWCDD, Dahlgren, Va	U	0	0	NONE	110	Dec-01	0	NONE	0	110	110
HW C - Integrated Collective Protection Power Transfer Kit for TCPS - Market Survey and Development	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	0	NONE	0	NONE	100	Dec-02	0	100	100
HW C - Development of Modified M28 Liner for Large Capacity Shelter	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	0	NONE	400	Dec-01	100	Dec-02	0	500	500
HW C - Shipboard CPS Supply fans - Development	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	165	Dec-02	0	165	165
SCPE													
SW SB - CPS Fan, Electronic Differential Pressure Gauge, Filter Performance - Development	WR	NSWCDD, Dahlgren, VA	U	0	75	Dec-00	100	Dec-01	100	Dec-02	0	275	275
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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CO5</b>		

I. Product Development - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Subtotal I. Product Development:				1503	1650		1645		1594		73	6465	
Remarks:													

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CBPS													
ES S - Shelter Government Engineering Support	MIPR	SBCCOM - Natick, MA	U	0	0	NONE	100	Oct-01	205	Oct-02	0	305	0
ILS S - Shelter - Contractor ILS/Engineering Support	C/CPFF	TBS	C	0	0	NONE	103	Oct-01	145	Oct-02	0	248	0
TD/D S - Shelter - Technical Data and Documentation	Various	TBS	C	0	0	NONE	0	NONE	25	Dec-02	0	25	0
JCPE													
TD/D SB - BTM Airlock TDP - Development	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	144	Dec-00	0	NONE	0	NONE	0	144	144
TD/D SB - 200 CFM Particulate Filter - Engineering Support for Market Survey	C/CPFF	Synetics, Dahlgren, VA	C	49	50	Dec-00	0	NONE	0	NONE	0	99	99
SCPE													
TD/D SB - Update/Develop TDPs, Perf Specs, Drawings, and Reports	WR	NSWCDD, Dahlgren, VA	U	786	98	Dec-00	144	Dec-01	100	Dec-02	0	1128	1128
Subtotal II. Support Costs:				835	292		347		475		0	1949	

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BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>CO5</b>																																																																																																																																																												
II. Support Costs - Cont. Remarks:																																																																																																																																																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 18%;">III. Test and Evaluation</th> <th style="width: 6%;">Contract Method &amp; Type</th> <th style="width: 14%;">Performing Activity &amp; Location</th> <th style="width: 3%;">US NF CC</th> <th style="width: 5%;">Total PYs Cost</th> <th style="width: 6%;">FY2001 Cost</th> <th style="width: 6%;">FY2001 Award Date</th> <th style="width: 6%;">FY2002 Cost</th> <th style="width: 6%;">FY2002 Award Date</th> <th style="width: 6%;">FY2003 Cost</th> <th style="width: 6%;">FY2003 Award Date</th> <th style="width: 6%;">Cost to Complete</th> <th style="width: 6%;">Total Cost</th> <th style="width: 6%;">Target Value of Contract</th> </tr> </thead> <tbody> <tr> <td>CBPS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DTE S - Shelter - Development Test and Evaluation</td> <td>MIPR</td> <td>DTC, APG, MD</td> <td>U</td> <td>0</td> <td>0</td> <td>NONE</td> <td>0</td> <td>NONE</td> <td>200</td> <td>Apr-03</td> <td>0</td> <td>200</td> <td>0</td> </tr> <tr> <td>JCPE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OTHT C - 100/200CFM Gas Filter - Live Agent Testing</td> <td>MIPR</td> <td>SBCCOM, APG, MD</td> <td>U</td> <td>0</td> <td>0</td> <td>NONE</td> <td>388</td> <td>Dec-01</td> <td>400</td> <td>Dec-02</td> <td>0</td> <td>788</td> <td>788</td> </tr> <tr> <td>OTHT SB - 200 CFM Particulate Filter - Testing Media and Assemblies</td> <td>C/CPFF</td> <td>Battelle, Columbus, OH</td> <td>N</td> <td>129</td> <td>150</td> <td>Dec-00</td> <td>0</td> <td>NONE</td> <td>0</td> <td>NONE</td> <td>0</td> <td>279</td> <td>279</td> </tr> <tr> <td>OTHT SB - FIF - Prototype Testing</td> <td>MIPR</td> <td>SBCCOM, APG, MD</td> <td>U</td> <td>30</td> <td>70</td> <td>Dec-00</td> <td>0</td> <td>NONE</td> <td>0</td> <td>NONE</td> <td>0</td> <td>100</td> <td>100</td> </tr> <tr> <td>OTHT C - FFA 400-100 &amp; M93 MCPE - Acceptance Testing</td> <td>MIPR</td> <td>SBCCOM, APG, MD</td> <td>U</td> <td>0</td> <td>0</td> <td>NONE</td> <td>200</td> <td>Dec-01</td> <td>0</td> <td>NONE</td> <td>0</td> <td>200</td> <td>200</td> </tr> <tr> <td>OTHT C - Modified ECU for EMEDS - Prototype Testing</td> <td>MIPR</td> <td>Eglin AFB, Valparaiso, FL</td> <td>U</td> <td>0</td> <td>125</td> <td>Dec-00</td> <td>50</td> <td>Jan-02</td> <td>0</td> <td>NONE</td> <td>0</td> <td>175</td> <td>175</td> </tr> <tr> <td>OTHT C - Shipboard CPS Supply Fans - Testing Prototype System</td> <td>WR</td> <td>NSWCDD, Dahlgren, VA</td> <td>U</td> <td>0</td> <td>0</td> <td>NONE</td> <td>0</td> <td>NONE</td> <td>285</td> <td>Dec-02</td> <td>0</td> <td>285</td> <td>285</td> </tr> <tr> <td>OTHT SB - Integrated CP Power Transfer Kit for TCPS - Prototype Testing</td> <td>MIPR</td> <td>Eglin AFB, Valparaiso, FL</td> <td>U</td> <td>0</td> <td>0</td> <td>NONE</td> <td>0</td> <td>NONE</td> <td>50</td> <td>Dec-02</td> <td>0</td> <td>50</td> <td>50</td> </tr> </tbody> </table>														III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract	CBPS														DTE S - Shelter - Development Test and Evaluation	MIPR	DTC, APG, MD	U	0	0	NONE	0	NONE	200	Apr-03	0	200	0	JCPE														OTHT C - 100/200CFM Gas Filter - Live Agent Testing	MIPR	SBCCOM, APG, MD	U	0	0	NONE	388	Dec-01	400	Dec-02	0	788	788	OTHT SB - 200 CFM Particulate Filter - Testing Media and Assemblies	C/CPFF	Battelle, Columbus, OH	N	129	150	Dec-00	0	NONE	0	NONE	0	279	279	OTHT SB - FIF - Prototype Testing	MIPR	SBCCOM, APG, MD	U	30	70	Dec-00	0	NONE	0	NONE	0	100	100	OTHT C - FFA 400-100 & M93 MCPE - Acceptance Testing	MIPR	SBCCOM, APG, MD	U	0	0	NONE	200	Dec-01	0	NONE	0	200	200	OTHT C - Modified ECU for EMEDS - Prototype Testing	MIPR	Eglin AFB, Valparaiso, FL	U	0	125	Dec-00	50	Jan-02	0	NONE	0	175	175	OTHT C - Shipboard CPS Supply Fans - Testing Prototype System	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	285	Dec-02	0	285	285	OTHT SB - Integrated CP Power Transfer Kit for TCPS - Prototype Testing	MIPR	Eglin AFB, Valparaiso, FL	U	0	0	NONE	0	NONE	50	Dec-02	0	50	50
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract																																																																																																																																																										
CBPS																																																																																																																																																																							
DTE S - Shelter - Development Test and Evaluation	MIPR	DTC, APG, MD	U	0	0	NONE	0	NONE	200	Apr-03	0	200	0																																																																																																																																																										
JCPE																																																																																																																																																																							
OTHT C - 100/200CFM Gas Filter - Live Agent Testing	MIPR	SBCCOM, APG, MD	U	0	0	NONE	388	Dec-01	400	Dec-02	0	788	788																																																																																																																																																										
OTHT SB - 200 CFM Particulate Filter - Testing Media and Assemblies	C/CPFF	Battelle, Columbus, OH	N	129	150	Dec-00	0	NONE	0	NONE	0	279	279																																																																																																																																																										
OTHT SB - FIF - Prototype Testing	MIPR	SBCCOM, APG, MD	U	30	70	Dec-00	0	NONE	0	NONE	0	100	100																																																																																																																																																										
OTHT C - FFA 400-100 & M93 MCPE - Acceptance Testing	MIPR	SBCCOM, APG, MD	U	0	0	NONE	200	Dec-01	0	NONE	0	200	200																																																																																																																																																										
OTHT C - Modified ECU for EMEDS - Prototype Testing	MIPR	Eglin AFB, Valparaiso, FL	U	0	125	Dec-00	50	Jan-02	0	NONE	0	175	175																																																																																																																																																										
OTHT C - Shipboard CPS Supply Fans - Testing Prototype System	WR	NSWCDD, Dahlgren, VA	U	0	0	NONE	0	NONE	285	Dec-02	0	285	285																																																																																																																																																										
OTHT SB - Integrated CP Power Transfer Kit for TCPS - Prototype Testing	MIPR	Eglin AFB, Valparaiso, FL	U	0	0	NONE	0	NONE	50	Dec-02	0	50	50																																																																																																																																																										
<div style="display: flex; justify-content: space-between;"> <span>Project CO5</span> <span>Page 64 of 113 Pages</span> <span>Exhibit R-3 (PE 0604384BP)</span> </div>																																																																																																																																																																							

## UNCLASSIFIED

## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

CO5

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT SB - Modified M28 Liner for Large Capacity Shelters - Prototype Testing	MIPR	HSW/YACN, Brooks AFB, San Antonio, TX	U	0	0	NONE	0	NONE	100	Dec-02	0	100	100
OTHT SB - Modified 100/200 CFM Filters for TICS - Prototype Testing	MIPR	SBCCOM, APG, MD	U	0	0	NONE	0	NONE	50	Dec-02	150	200	200
OTHT SB - Pleatable Charcoal/HEPA Bonded Filter - Testing	MIPR	SBCCOM, Edgewood, MD	U	0	0	NONE	150	Dec-01	0	NONE	0	150	150
OTHT SB - 2000 CFM Particulate Filter - Test	MIPR	SBCCOM, Edgewood, MD	U	0	0	NONE	150	Dec-01	250	Dec-02	0	400	400
OTHT SB - Modified Impingement Filter for Ships - Testing	MIPR	SBCCOM, Edgewood, MD	U	0	0	NONE	0	NONE	50	Dec-02	0	50	50
SCPE													
OTHT SB - Improved CPS Fan - Shipboard Testing	WR	NSWCDD, Dahlgren, VA	U	0	99	Dec-00	130	Dec-01	142	Dec-02	0	371	371
OTHT SB - Improved CPS Fan - Landbased Testing	WR	NSWCDD, Philadelphia, PA	U	110	99	Dec-00	0	NONE	0	NONE	0	209	209
OTHT SB - Improved CPS Fan - Additional Landbased Testing	C/FP	New World Associates, Fredericksburg, VA	C	60	100	Jun-01	0	NONE	0	NONE	0	160	160
OTHT SB - Filters - Various Component Testing and Testing Electronic Differential Pressure Gauge	WR	NSWCDD, Dahlgren, VA	U	770	70	Dec-00	95	Dec-01	95	Dec-02	0	1030	1030

Project CO5

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Exhibit R-3 (PE 0604384BP)

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## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2002		
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev					PE NUMBER AND TITLE 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)						PROJECT CO5		
III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
OTHT C - HEPA Filter TIC/TIM Evaluation	WR	NSWCDD, Dahlgren, VA	U	0	50	Dec-00	150	Dec-01	150	Dec-02	0	350	350
Subtotal III. Test and Evaluation:				1099	763		1313		1772		150	5097	
Remarks:													
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
CBPS													
PM/MS S - Management Support	PO	SBCCOM-Natick, MA	U	0	0	NONE	24	Oct-01	25	Oct-02	0	49	0
JCPE													
PM/MS S - Overall Program Management and IPT Oversight	WR	NSWCDD, Dahlgren, VA	U	192	195	Oct-00	342	Oct-01	174	Oct-02	0	903	787
PM/MS S - IPT Support	MIPR	Various	U	146	146	Dec-00	164	Dec-01	164	Dec-02	0	620	632
SCPE													
PM/MS S - Overall Program Management	WR	NSWCDD, Dahlgren, VA	U	220	91	Dec-00	84	Dec-01	97	Dec-02	0	492	511
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	68	2Q FY02	0	NONE	0	68	0
Subtotal IV. Management Services:				558	432		682		460		0	2132	
Project CO5													
Page 66 of 113 Pages													
Exhibit R-3 (PE 0604384BP)													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)						DATE February 2002						
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>			PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>CO5</b>					
IV. Management Services - Cont. Remarks:												
TOTAL PROJECT COST:			3995	3137		3987		4301		223	15643	
Project CO5												



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>DE5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
DE5      DECONTAMINATION SYSTEMS (EMD)	3746	2498	4981	4925	897	0	0	0	17047

**A. Mission Description and Budget Item Justification:**

**Project DE5 DECONTAMINATION SYSTEMS (EMD):** This project funds System Development and Demonstration (SDD) of decontamination equipment for the Joint Service Fixed Site Decontamination (JSFXD) Program aimed at developing a family of decontaminants and a family of applicators. The program will provide soldiers, sailors, marines, and airmen the equipment necessary to fully decontaminate their vital areas to sustain critical cargo flow into theater. The program has been divided into three blocks. Block I will field decontaminants that will be used with integral or existing applicators. Block II will field any additional applicators and containment systems required to provide the full fixed site decontamination capability (excluding Block III). Block III will provide the capability to decontaminate skin/casualties with open wounds.

**FY 2001 Accomplishments:**

- 2314 JSFXD - Completed MS B and initiated MS C program documentation for Block I.
- 1432 JSFXD - Start of Block I Development Test (DT)/Operational Test (OT) slipped to FY02.

**Total**            3746

**FY 2002 Planned Program:**

- 1522 JSFXD - Complete DT/OT on family of decontaminants for Block I. Complete MS C documentation for Block I.

Project DE5
Page 68 of 113 Pages
Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>DE5</b>

**FY 2002 Planned Program (Cont):**

- 142 JSFXD - Incorporate lessons learned from OT into logistics support documentation for Block I family of decontaminants.
- 792 JSFXD - Prepare documentation and test reports, conduct downselect of medical/skin decontaminant in support of Block III SDD contract award.
- 42 SBIR - Small Business Innovative Research.

**Total** 2498

**FY 2003 Planned Program:**

- 1831 JSFXD - Initiate DT/OT of family of applicators for Block II using GFE and engineering models applicators.
- 2150 JSFXD - Initiate clinical testing for FDA approval for skin decontaminants Block III.
- 1000 JSFXD - Award and execute SDD contract for FDA approved medical skin decontaminants Block III.

**Total** 4981

Project DE5

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Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																																										
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>DE5</b>																																								
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 5%;"><u>FY 2001</u></th> <th style="width: 5%;"><u>FY 2002</u></th> <th style="width: 5%;"><u>FY 2003</u></th> <th style="width: 5%;"><u>FY 2004</u></th> <th style="width: 5%;"><u>FY 2005</u></th> <th style="width: 5%;"><u>FY 2006</u></th> <th style="width: 5%;"><u>FY 2007</u></th> <th style="width: 5%;"><u>To Compl</u></th> <th style="width: 5%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>G47001 MODULAR DECON SYSTEM</td> <td style="text-align: center;">2450</td> <td style="text-align: center;">4997</td> <td style="text-align: center;">5007</td> <td style="text-align: center;">5098</td> <td style="text-align: center;">4973</td> <td style="text-align: center;">4987</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">27512</td> </tr> <tr> <td>JN0010 JOINT SERVICE FIXED SITE DECON (JSFXD)</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1515</td> <td style="text-align: center;">2001</td> <td style="text-align: center;">7508</td> <td style="text-align: center;">6579</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">17603</td> </tr> <tr> <td>JN0018 SORBENT DECON</td> <td style="text-align: center;">2726</td> <td style="text-align: center;">8578</td> <td style="text-align: center;">8553</td> <td style="text-align: center;">266</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">20123</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	G47001 MODULAR DECON SYSTEM	2450	4997	5007	5098	4973	4987	0	0	27512	JN0010 JOINT SERVICE FIXED SITE DECON (JSFXD)	0	1515	2001	7508	6579	0	0	0	17603	JN0018 SORBENT DECON	2726	8578	8553	266	0	0	0	0	20123
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																																								
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JN0018 SORBENT DECON	2726	8578	8553	266	0	0	0	0	20123																																								
<b>C. <u>Acquisition Strategy:</u></b> JSFXD Block I will competitively procure COTS/NDI decontaminants and where required, integral applicators for government/contractor testing with options for production. Block II will be a competitive contract to evaluate GFE applicators and containment systems for government/contractor testing with options for production of associated components for GFE applicators. Block III will be a competitive procurement of COTS/NDI decontaminants with potential to meet FDA requirements for government/contractor testing with options for production.																																																	
<div style="display: flex; justify-content: space-between;"> <span>Project DE5</span> <span>Page 70 of 113 Pages</span> <span>Exhibit R-2 (PE 0604384BP)</span> </div>																																																	

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

PROJECT

**DE5****D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JSFXD																																
Block I - IV In Process Review (IPR)					1Q	2Q																										
Block I Milestone B									2Q																							
Block I Developmental Test (DT)/Operational Test (OT)									2Q	3Q																						
Block I Milestone C													3Q																			
Block II Milestone B													1Q																			
Block II DT/Operational Test (OT) for Family of Applicators													1Q	<div></div>		1Q																
Block II Milestone C																3Q																
Block III Tests for Downselect								3Q	<div></div>				3Q																			
Block III Milestone B												4Q																				
Block III Federal Drug Administration (FDA) Clinical Testing													3Q	<div></div>			2Q															
Block III Developmental Test/ Operational Test (DT/OT)													3Q	<div></div>							4Q											
Block III Milestone C																					1Q											

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>DE5</b>		

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
SW SB - SDD Contract for Block II	C/FFP	TBS	C	0	2500	Nov-00	0	NONE	0	NONE	0	2500	0
SW SB - SDD Contract for Medical and Skin Decon for Block III	C/CPFF	TBS	C	0	0	NONE	0	NONE	976	Nov-02	0	976	0
Subtotal I. Product Development:				0	2500		0		976		0	3476	
Remarks:													

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
ES S - Contract Support for SSD Phase	C/CPFF	SVERDRUP, Dumfries, VA	C	0	600	Feb-01	300	Feb-02	100	Nov-02	0	1000	0
Subtotal II. Support Costs:				0	600		300		100		0	1000	
Remarks:													

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>							PROJECT <b>DE5</b>	

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
OTHT SB - Block I Family of Decontaminants	MIPR	Dugway Proving Ground, UT	U	0	0	NONE	1556	Feb-02	0	NONE	0	1556	0
OTHT SB - DT/OT Family of Applicators Block II	MIPR	Dugway Proving Ground, UT	U	0	0	NONE	0	NONE	1700	Nov-02	0	1700	0
OTHT S - FDA Testing of Skin Decon	MIPR	TBS	C	0	0	NONE	0	NONE	1700	Feb-02	2900	4600	0
Subtotal III. Test and Evaluation:				0	0		1556		3400		2900	7856	
Remarks:													

IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSFXD													
PM/MS S - Joint IPT Support	MIPR	Various	U	0	646	Jan-01	600	Jan-02	505	Nov-02	0	1751	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	42	2Q FY02	0	NONE	0	42	0
Subtotal IV. Management Services:				0	646		642		505		0	1793	
Remarks:													

Project DE5

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Exhibit R-3 (PE 0604384BP)

UNCLASSIFIED

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)						DATE February 2002						
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev			PE NUMBER AND TITLE 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)				PROJECT DE5					
TOTAL PROJECT COST:			0	3746		2498		4981		2900	14125	
Project DE5												

UNCLASSIFIED

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>IP5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
IP5      INDIVIDUAL PROTECTION (EMD)	8288	20711	39044	36195	12735	1411	0	0	118384

**A. Mission Description and Budget Item Justification:**

**Project IP5 INDIVIDUAL PROTECTION (EMD):** This project funds Engineering and Manufacturing Development (EMD) of individual protection equipment, such as the Joint Service Lightweight Integrated Suit Technology (JSLIST) ensemble, aimed at increasing individual protection levels while reducing physiological and logistical burdens. The goal is to provide equipment that allows the individual Soldier, Sailor, Airman, or Marine to operate in a contaminated Nuclear, Biological and Chemical (NBC) environment with little or no degradation of his/her performance. Funding is provided for: (1) design of Aircrew Eye-Respiratory Protection (AERP) systems modification kits for aircraft compatibility; (2) development of the Joint Service Aircrew Mask (JSAM), to replace multiple Service-specific aircrew chemical protective masks; (3) development of a JSLIST Block I glove upgrade to meet special operations forces and other Services hand protection requirements; (4) development of a JSLIST Block II glove upgrade to meet joint aircrew and ground hand protection requirements; (5) development of a JSLIST Multi-Purpose Sock (MPS); (6) development of a Joint Protective Aircrew Ensemble (JPACE) to standardize aircrew ensembles across the services and reduce user fatigue; and (7) development of a Joint Service General Purpose Mask (JSGPM) to replace and improve upon the multiple masks currently used by U.S. ground forces.

Project IP5
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Exhibit R-2 (PE 0604384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>IP5</b>

**FY 2001 Accomplishments:**

- 88 AERP Mods - Continued non-recurring engineering design and development for the B-2 aircraft modification installation kits.
- 2287 JPACE - Developed prototype ensemble for testing under phase DT IIA. Performed DT IIA material swatch testing to downselect to no more than six candidates.
- 1273 JPACE - Continued development of patterns for use in fabrication of JPACE. Initiated development of program, logistics, and technical documentation to support the development and fielding of JPACE.
- 650 JSGPM - Initiated testing and evaluation of two, commercially available, escape masks. (1000 prototypes at \$125)
- 289 JSLIST Second Source - Conducted research and evaluation of second source material for JSLIST production.
- 570 JSLIST Second Source - Initiated screening and testing on selected second source materials candidates.
- 2230 JSLIST Second Source - Evaluated and tested final selected material for second source for technology insertion to JSLIST.
- 901 JSLIST Block I Glove Upgrade - Started Operational Test (OT) and documentation transition to Block II glove program.

**Total** 8288

**FY 2002 Planned Program:**

- 81 AERP Mods - Maintain configuration control on B-2 Aircraft AERP modification design.

Project IP5

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>IP5</b>

**FY 2002 Planned Program (Cont):**

- 2642 JPACE - Downselect and conduct Milestone B. Award contracts to no more than two candidate materials based on DT IIA material swatch test results. Fabricate 125 prototype ensembles of each of the selected candidates for use in DT IIB (250 total at \$525 each). Initiate DT IIB testing on the candidates to verify system level performance requirements have been met.
- 1090 JPACE - Complete development of patterns for use in fabrication of JPACE. Continue developing and updating program, logistics, and technical documentation required to support the development and fielding of JPACE.
- 1846 JSAM - Conduct System Demonstration (SD) source selection, MS B Interim Progress Review and award SD contract.
- 8004 JSGPM - Conduct System Demonstration phase. This phase includes award of the System Demonstration contract option which will deliver 5,000 prototypes at an estimated cost of \$500 each. Also included is the design and assembly of the System Support Packages for Production Qualification Testing, and Operational Testing and Evaluation.
- 1374 JSGPM - Prepare program/project documentation to achieve Milestone C. Documentation includes: Single Acquisition Management Plan (SAMP), the Manpower and Personnel Integration (MANPRINT) Plan, ORD Update, and performance specifications.
- 770 JSGPM - Execute Logistics Support Plan. This effort includes development of manuals and finalization of supportability plans.
- 880 JSGPM - Initiate the documentation and planning for Developmental and Operational Testing (DT/OT). Test redesigned prototypes to assess shortcomings exposed during System Integration Phase.
- 2200 JSGPM - Initiate development of a JSGPM variant as a lightweight compliment to the JSGPM against limited threats.

Project IP5

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Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>IP5</b>
<p><b>FY 2002 Planned Program (Cont):</b></p> <ul style="list-style-type: none"> <li>• 1009 JSLIST Block II Glove Upgrade - Start analysis to integrate Joint Service aviation and ground usage requirements and update acquisition strategy.</li> <li>• 300 JSLIST Block II Glove Upgrade - Prepare RFP for acquisition of competitive materiel for source selection.</li> <li>• 165 JSLIST Block II Glove Upgrade - Prepare program documentation for Interim Process Review (IPR).</li> <li>• 350 SBIR - Small Business Innovative Research.</li> </ul> <p><b>Total</b>      20711</p> <p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 82 AERP Mods - Maintain configuration control on B-2 Aircraft modification design.</li> <li>• 5906 JPACE - Complete DT IIB testing and downselect to two candidates. Fabricate 350 prototype ensembles of each candidate for combined DT/OT (700 total at \$525 each). Initiate combined DT/OT system level testing and initial Operational Assessment (OA) to verify system level performance and assess operational suitability and durability. Testing includes aircraft integration testing (crashworthiness, early flight, and aircraft compatibility) on six aircraft and system level chemical simulant testing (Man In Simulant Test).</li> <li>• 812 JPACE - Continue developing and updating program, logistics, and technical documentation required to ensure that JPACE will be fully supported when fielded. Initiate finalization of suit/fabric patterns.</li> <li>• 4676 JSAM - Finalize system design and complete development. Begin logistics activities and sustainment planning to include tech order preparation, provisioning, and fielding plan.</li> <li>• 1360 JSAM - Continue program management activities and government test planning in preparation for DT and OT.</li> </ul>		
Project IP5	Page 78 of 113 Pages	Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>IP5</b>

**FY 2003 Planned Program (Cont):**

- 3793 JSAM - Complete system validation, develop production processes and hard tooling to fabricate DT and OT units.
- 2412 JSAM - Initiate material buy and begin assembly of 466 DT units at an average unit cost of \$5175.
- 840 JSGPM - Continue preparation of program/project documentation to achieve Milestone C. Documentation includes Single Acquisition Management Plan (SAMP), the Manpower and Personnel Integration (MANPRINT) Plan and Performance Specifications.
- 512 JSGPM - Continue execution of Logistics Support Plan. This effort includes development of manuals and finalization of supportability plans.
- 8000 JSGPM - Continue System Demonstration. System Demonstration includes system support packages for Production Qualification Testing, and Initial Operational Testing and Evaluation. The contract includes delivery of 5,000 prototypes (\$500 each) in 2QFY04.
- 3000 JSGPM - Continue documentation and planning for Developmental and Operational Testing (DT/OT). Test redesigned prototypes to assess shortcomings exposed during System Integration Phase.
- 2250 JSGPM - Continue development of a JSGPM variant as a lightweight complement to the JSGPM against limited threats.
- 474 JSLIST Block II Glove Upgrade - Award multiple competitive contracts for system development and demonstration.
- 2600 JSLIST Block II Glove Upgrade - Conduct durability and chemical validation testing for ground and aviation missions.
- 401 JSLIST Block II Glove Upgrade - Conduct project management and plan test readiness reviews.

Project IP5

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Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <div style="text-align: right;"><b>February 2002</b></div>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>IP5</b>	
<b>FY 2003 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>• 300 JSLIST Block II Glove Upgrade - Complete acquisition of Block II Glove Upgrade candidates. Conduct air/ground Operational Test (OT) and complete Milestone C .</li> <li>• 250 JSLIST MPS - Conduct field durability trials for air/ground missions.</li> <li>• 850 JSLIST MPS - Conduct chemical validation test trials.</li> <li>• 526 JSLIST MPS - Conduct air/ground Operational Test (OT) and complete Milestone C documentation.</li> </ul>									
<b>Total</b> 39044									
<b>B. <u>Other Program Funding Summary:</u></b>									
	<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>	<u><b>FY 2004</b></u>	<u><b>FY 2005</b></u>	<u><b>FY 2006</b></u>	<u><b>FY 2007</b></u>	<u><b>To Compl</b></u>	<u><b>Total Cost</b></u>
JA0002 JT SVC AVIATION MASK (JSAM)	0	0	0	0	0	10970	10971	Cont	Cont
JN0011 AERP AIRCRAFT MODS	1574	2941	896	0	0	0	0	0	5411
JN0013 NAVY INDIVIDUAL PROTECTIVE GEAR	5379	2312	3186	0	0	0	0	0	10877
JN0015 JOINT PROTECTIVE AIRCREW ENSEMBLE	0	0	0	0	21450	21850	24466	Cont	Cont
JSM001 JOINT SERVICE MASK LEAKAGE TESTER (JSMLT)	0	0	11859	4963	4931	4938	4933	Cont	Cont
<div style="display: flex; justify-content: space-between;"> <span>Project IP5</span> <span>Page 80 of 113 Pages</span> <span>Exhibit R-2 (PE 0604384BP)</span> </div>									

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>IP5</b>
<b>B. <u>Other Program Funding Summary (Cont):</u></b>	<b><u>FY 2001</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>	<b><u>FY 2006</u></b>	<b><u>FY 2007</u></b>	<b><u>To Compl</u></b>	<b><u>Total Cost</u></b>	
JX0055 INDIVIDUAL PROTECTION (IP) ITEMS LESS THAN \$5M	4124	993	0	0	0	0	0	0	5117	
M99501 MASK, AIRCRAFT M45	998	454	0	0	0	0	0	0	1452	
M99601 MASK, CHEM-BIOLOGICAL PROTECTIVE FIELD: M40/M40A	1485	142	0	0	0	0	0	0	1627	
MA0400 PROTECTIVE CLOTHING	96991	98531	91202	79913	89460	99584	92179	Cont	Cont	
N00020 CB RESPIRATORY SYSTEM - AIRCREW	3971	3897	3136	0	0	0	0	0	11004	
<div style="display: flex; justify-content: space-between;"> <span>Project IP5</span> <span>Page 81 of 113 Pages</span> <span>Exhibit R-2 (PE 0604384BP)</span> </div>										

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>IP5</b>

**C. Acquisition Strategy:**

AERP Mods	Various methods will be utilized, to include both government project order and commercial contracts for development, fabrication of prototype test hardware, and maintenance of configuration control of AERP aircraft modifications.
JSAM	The acquisition strategy for System Demonstration is to award one Cost Plus Award Fee contract using Full and Open competition. The contract will include Fixed Price Production options. During the System Demonstration effort, JSAM will provide DT assets (certified safe-to-fly during JSAM DT ground test) to the JPACE program to support their OT and the JSAM OT will utilize JPACE assets. These latter efforts are to ensure JSAM - JPACE integration.
JPACE	The acquisition strategy employs a time-phased approach, commonly referred to as "Blocking". Block I will address 90% of the JPACE requirements. Block II is intended to address any deficiencies found in Block I and specifically to address CB protection in a rotorwash or high velocity wind environment and to enhance the thermal burden reduction capabilities of the JPACE system. Block I will include a competitive material search for advanced material technologies addressing aviation material performance requirements from the JPACE Joint ORD. Multiple Firm Fixed Price delivery order type contracts will be awarded to finalize design and verify system level requirements. These contract vehicles will include quantities for System Development and Demonstration (SDD), Low Rate Initial Production (LRIP), and Full Rate Production (FRP).
JSLIST Block I	Conduct market research and operational assessment of commercial CB protective glove to satisfy SOCOM requirement and the four services urgent requirement for an improved CB protective glove to replace the current butyl rubber glove.
JSLIST Block II	Conduct market research, development and operational assessment of CB protective glove materials, concentrating on selectively permeable solutions to satisfy the current 45 day requirement in JSLIST, JPACE, and SOCOM ORD.
JSLIST MPS	Full and open commercial acquisition of the best candidate from foreign or domestic sources, tested through gated durability and chemical testing to meet SOCOM requirements.

Project IP5

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDTE&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**






PROJECT

**IP5**

JSGPM

Combined full scale System Development and Demonstration and Production with contractor logistics support (CLS). The contract for development/production is based on a Joint Service performance specification with special emphasis on reducing weight, bulk, and breathing resistance by as much as 50 percent over currently fielded masks, and the lowest achievable total ownership cost. There is also an effort to develop a lightweight variant for limited operations.

**D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
AERPMODS																																
B-2 Develop Mod Design Proposal				3Q					4Q																							
B-2 Modification Design and Development							2Q			4Q																						
B-2 Configuration Maintenance of Design									1Q								4Q															
JPACE																																
Developmental Testing (DT I) on Existing Aviation Systems/Requirements Definition	1Q	2Q																														
Direction to Execute Approved Acquisition Strategy				4Q																												
Pattern Development				4Q								3Q																				
Solicitation to Develop Prototype Ensembles				4Q																												
Develop Prototype for Testing - DT IIA					1Q	2Q																										
Developmental Testing - DT IIA							2Q			4Q																						
Milestone B										2Q																						



# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE  
**February 2002**

BUDGET ACTIVITY









**RD&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

PROJECT

**IP5****D. Schedule Profile (cont):**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JPACE (Cont)																																
Fabricate Prototypes for Developmental Test - DT IIB & Combined DT/OT									2Q					3Q																		
Developmental Testing - DT IIB									3Q					1Q																		
Pattern Finalization													1Q					4Q														
Developmental Testing - Combined DT/OT Operational Assessment														3Q					2Q													
Milestone C - Low Rate Initial Production (LRIP)																	3Q															
Award Low Rate Initial Production Delivery Order Contract																		4Q														
JSAM																																
Milestone B In Process Review (IPR) (IP5)									3Q																							
System Demonstration									4Q													4Q										
Development Test															2Q					3Q												
Operational Test (Rotary Wing)																		3Q					3Q									
Operational Test (Fixed Wing)																					1Q					4Q						
Milestone C (Full Rate Production Decision - Rotary Wing)																						3Q										

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>IP5</b>	

<b>D. <u>Schedule Profile (cont):</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSAM (Cont)																																
Milestone C (Full Rate Production Decision - Fixed Wing)																															4Q	
JSGPM																																
Award Systems Demonstration Option											2Q																					
Conduct System Demonstration											2Q																				4Q	
Develop a JSGPM variant to compliment the JSGPM											2Q																				4Q	
Prepare Documentation for the DT and OT Testing											1Q																				4Q	
Developmental Testing																															2Q 3Q	
Prepare and Execute Logistics Support Plan											2Q																				1Q	
Preparation of Milestone C Documentation											2Q																				4Q	
Milestone C/Type Classification (TC) In Process Review (IPR)																															1Q	
Operational Testing with Production Representative Articles																															2Q	
PROT CLTH																																

Project IP5
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Exhibit R-2 (PE 0604384BP)

# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE  
**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

PROJECT

**IP5****D. Schedule Profile (cont):**

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
PROT CLTH (Cont)																																
JSLIST Block I Glove Operational Test (OT)							4Q	1Q																								
JSLIST Block I Glove Milestone C								1Q																								
JSLIST Block II Glove Prototype Build									3Q																							
JSLIST Block II Glove Conduct DT/Operational Test (OT)													3Q																			
JSLIST Block II Glove Milestone C													4Q																			
JSLIST MPS FCT Data Transfer to System Design and Demonstration Phase.													1Q																			
JSLIST MPS Milestone B													1Q																			
JSLIST MPS Developmental Test/Operational Test (DT/OT)													1Q	<div></div>	4Q																	
JSLIST MPS Milestone C														4Q																		
JSLIST MPS Production Contract Award															1Q																	

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>IP5</b>		

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AERPMODS													
HW C - Engineering Modification Design of B-2 Aircraft to Support AERP Equipment	SS/FPI	OC-ALC, Tinker AFB OK	C	406	88	2Q FY01	0	NONE	0	NONE	0	494	675
HW C - Engineering Configuration Control Maintenance	PO	Various	U	82	0	NONE	81	1Q FY02	82	1Q FY03	0	245	0
JPACE													
HW C - Prototype Pattern Design	MIPR	NCTRF/PMESS, Natick, MA	U	399	253	Dec-00	176	Dec-01	50	Dec-02	50	928	932
HW S - Prototype Procurement	C/FFP	TBS	C	0	0	NONE	176	Mar-02	537	Mar-03	600	1313	1320
JSAM													
HW S - Contractor Development	C/CPAF	TBS	C	0	0	NONE	0	NONE	2412	1Q FY03	0	2412	0
JSGPM													
PM/MS S - Vaccine Development - Program Management and Program Manager support.	C/CPIF	Avon, Inc., Cadillac, MI	C	0	0	NONE	7221	Mar-02	8000	1Q FY03	5768	20989	22738
HW S - Development of a Lightweight JSGPM Variant by the Contractor	C/CPIF	TBS	C	0	0	NONE	0	NONE	1850	1Q FY03	1200	3050	0
PROT CLTH													
SW SB - Block II Glove Prototypes	C/FFP	TBS	U	0	0	NONE	0	NONE	500	Mar-03	0	500	0
Subtotal I. Product Development:				887	341		7654		13431		7618	29931	

Remarks: JSGPM - FY03 continues System Demonstration. System Demonstration includes delivery of 5,000 prototypes (\$500 each) in 2QFY04.

Project IP5
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Exhibit R-3 (PE 0604384BP)

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## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>IP5</b>		
II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPACE													
ES S - Systems Engineering	WR	NAWCAD, Patuxent River, MD	U	221	234	Nov-00	249	Nov-01	159	Dec-02	320	1183	1190
ILS S - Systems Logistics	WR	NAWCAD, Patuxent River, MD	U	96	104	Nov-00	102	Nov-01	85	Nov-02	150	537	540
TD/D S - Technical Report	C/CPFF	Battelle, Columbus, OH	N	0	180	Dec-00	101	Dec-01	34	Dec-02	34	349	352
ILS S - Logistics Support	C/CPFF	Battelle, Columbus, OH	N	344	52	Dec-00	146	Dec-01	199	Dec-02	350	1091	1096
JSAM													
ES S - JSAM - Design Engineering	C/CPAF	TBS	C	0	0	NONE	1846	Sep-02	3793	1Q FY03	0	5639	0
TD/D SB - System Engineering, ILS, TM Prep	PO	TBS	U	0	0	NONE	0	NONE	3462	1Q FY03	0	3462	0
JSGPM													
ES S - Engineering Support	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	757	1Q FY02	936	1Q FY03	889	2582	2852
TD/D S - Tech Data and Documentation of JSGPM System	MIPR	PM NBCDS, APG, MD	U	0	0	NONE	500	1Q FY02	400	1Q FY03	250	1150	1000
ILS S - Logistics Support of JSGPM System	PO	PM NBCDS, APG, MD	U	0	0	NONE	700	1Q FY02	422	1Q FY03	420	1542	1700
ES S - Systems Engineering for Lightweight Mask Variant	MIPR	PM NBCDS, APG, MD - VARIOUS	U	0	0	NONE	1100	2Q FY02	300	1Q FY03	200	1600	0
PROT CLTH													
TD/D SB - Research and Evaluation of Second Source Material	MIPR	Various	U	0	556	Mar-01	0	NONE	0	NONE	0	556	0
Project IP5													

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>								PROJECT <b>IP5</b>	
II. Support Costs - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
TD/D SB - Prepared RFP and Source Selection for Block II Glove	MIPR	Various	U	0	0	NONE	300	1Q FY02	0	NONE	0	300	0	
TD/D SB - Analysis to Integrate JS Air/Ground Requirements and Insert Block I Glove Data.	MIPR	Various	U	0	0	NONE	1009	1Q FY02	360	1Q FY03	0	1369	0	
Subtotal II. Support Costs:				661	1126		6810		10150		2613	21360		
Remarks:														

## UNCLASSIFIED

## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

IP5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPACE													
DTE S - Aircraft Integration Testing	WR	NAWCAD, Patuxent River, MD	U	333	77	Jan-01	200	Nov-01	1214	Nov-02	300	2124	2135
DTE S - Material Testing	WR	NCTRF, Natick, MA	U	35	0	NONE	274	Dec-01	149	Dec-02	300	758	766
DTE C - Material Testing	MIPR	PMESS, Natick, MA	U	162	30	Dec-00	175	Dec-01	95	Dec-02	30	492	496
DTE C - Chemical Testing	MIPR	USA DTC, Dugway, UT	U	200	792	Dec-00	385	Dec-01	818	Dec-02	450	2645	2659
DTE S - Don/Doff Testing	WR	LANL, Los Alamos, NM	U	40	0	NONE	380	Dec-01	299	Dec-02	600	1319	1329
DTE S - Fit Testing	SS/FFP	Anthrotech, Yellow Springs, OH	C	57	0	NONE	49	Dec-01	57	Dec-02	130	293	294
DTE C - Prototype Test Support	SS/FFP	Research Triangle Institute, Research Triangle, NC	C	0	0	NONE	0	NONE	378	Mar-03	380	758	760
DTE S - Chemical Tests	MIPR	USA DTC, Dugway, UT	U	0	0	NONE	226	Dec-01	373	Dec-02	740	1339	1347
DTE S - Prototype Test	WR	NAWCAD, Patuxent River, MD	U	0	0	NONE	0	NONE	600	Dec-02	895	1495	1498
DTE C - Chemical Testing	C/CPFF	Battelle, Columbus, OH	N	0	960	Mar-01	146	Mar-02	818	Mar-03	450	2374	2382
JSAM													
DTE S - Govt DT Activities	MIPR	NAVAIR, Patuxent River, MD	U	0	0	NONE	0	NONE	700	Jan-03	0	700	0
OTE S - Govt OT activities	PO	AFOTEC, Alamogordo, NM	U	0	0	NONE	0	NONE	514	Jan-03	0	514	0

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## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

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RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

IP5

III. Test and Evaluation - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JSGPM													
DTE S - Developmental Testing of JSGPM System	MIPR	ATEC Falls Church VA; DTC; HRED, APG, MD	U	0	550	3Q FY01	270	1Q FY02	400	1Q FY02	847	2067	1250
OTE S - Operational Testing of JSGPM System	MIPR	OTC PAT/IOT&E various locations	U	0	0	NONE	570	1Q FY02	956	1Q FY03	4000	5526	8050
PROT CLTH													
OTE S - Block II Glove Test	MIPR	Various	U	685	0	NONE	0	NONE	2240	Jul-03	0	2925	0
OTHT SB - Second Source Material Candidate Testing	MIPR	MCSC, Quantico, VA	U	0	450	Mar-01	0	NONE	0	NONE	0	450	0
OTE S - Complete Testing for Block I Glove	MIPR	Various	U	0	475	1Q FY01	0	NONE	0	NONE	0	475	0
DTE S - JSLIST MPS Durability Trials	MIPR	Various	U	0	0	NONE	0	NONE	200	2Q FY03	0	200	0
DTE C - JSLIST MPS Chemical Validation	MIPR	Various	U	0	0	NONE	0	NONE	710	3Q FY03	0	710	0
OTE C - JSLIST MPS Air/Ground OT	C/FPI	Various	C	0	0	NONE	0	NONE	430	1Q FY03	0	430	0
OTHT SB - Second Source Material Testing	MIPR	Various	U	0	2000	2Q FY01	0	NONE	0	NONE	0	2000	0
Subtotal III. Test and Evaluation:				1512	5334		2675		10951		9122	29594	

Remarks: JSAM - Responsible test organization is the Naval Air Warfare Center in Patuxent River, Maryland.

Operational test organization is AFOTEC .

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>IP5</b>		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JPACE													
PM/MS S - Overall Program Coordination	WR	NAWCAD, Patuxent River, MD	U	186	334	Nov-00	320	Nov-01	326	Nov-02	200	1366	1385
PM/MS S - Air Force, Army, Marine Corps Program Coordination	MIPR	Various	U	318	144	Dec-00	301	Dec-01	229	Dec-02	420	1412	1421
PM/MS C - Management Support	C/CPFF	Battelle, Columbus, OH	N	0	400	Dec-00	326	Dec-01	298	Dec-02	320	1344	1352
JSAM													
PM/MS C - Program Management/Management Support	MIPR	Various	U	0	0	NONE	0	NONE	1360	1Q FY03	0	1360	0
JSGPM													
PM/MS S - Program Management by Army (Lead Service)	PO	PM NBCDS, SBCCOM, APG, MD	U	0	100	3Q FY01	410	1Q FY02	688	1Q FY03	519	1717	1400
PM/MS S - Program Management by Joint Services other than Army	MIPR	USN, USAF, USMC various locations	U	0	0	NONE	600	1Q FY02	550	1Q FY03	500	1650	1900
PM/MS S - Program Management for Lightweight Variant Mask	PO	PM NBCDS, SBCCOM, APG, MD	U	0	0	NONE	1100	2Q FY02	100	1Q FY03	100	1300	0
PROT CLTH													
PM/MS C - IPT Support	MIPR	Various	U	386	509	Feb-01	165	Nov-01	961	Nov-02	0	2021	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	350	2Q FY02	0	NONE	0	350	0
Subtotal IV. Management Services:				890	1487		3572		4512		2059	12520	
<div>Project IP5</div> <div>Page 92 of 113 Pages</div> <div>Exhibit R-3 (PE 0604384BP)</div>													

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CBDP PROJECT COST ANALYSIS (R-3 Exhibit)						DATE February 2002		
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>			PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>IP5</b>	
IV. Management Services - Cont. Remarks:								
TOTAL PROJECT COST:			3950	8288	20711	39044	21412	93405
Project IP5								

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>MB5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
MB5 MEDICAL BIOLOGICAL DEFENSE (EMD)	15772	48500	44718	11853	2264	0	0	0	123107

**A. Mission Description and Budget Item Justification:**

**Project MB5 MEDICAL BIOLOGICAL DEFENSE (EMD):** This project funds the Production and Deployment phase of vaccines, drugs, and diagnostic medical devices that are directed against validated biological warfare (BW) agents to include bacteria, viruses, and toxins of biological origin. Efforts for medical biological defense product development involve production scale-up studies, consistency manufacturing, and expanded human safety studies. The results of these efforts, and those conducted during the System Development and Demonstration phase, will be used to submit a Biologic License Application (BLA) to the Food and Drug Administration (FDA) for product licensure. Upon FDA licensure the product will transition to full-scale licensed production. Products to be developed under this program include: Recombinant Botulinum, Next Generation Anthrax, Plague, Smallpox, Tularemia, Staphylococcal Enterotoxins, and Equine Encephalitis vaccines.

The Joint Biological Agent Identification and Diagnostic System (JBAIDS) is a reusable, portable, modifiable biological agent identification and diagnostic system. JBAIDS will enhance force protection by providing commanders and medical personnel with the capability to determine appropriate treatment, effective preventive measures, and prophylaxis, in response to the presence of biological agents. JBAIDS will be configured to support reliable, fast and specific identification of biological agents from a variety of clinical sources and preventive medicine samples. Technologies will be selected based on their reliability, technological maturity, and supportability. In addition to mobile and fixed site facilities, the JBAIDS will be used on ground vehicles, aircraft (fixed and rotary wing), and ships.

Project MB5
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Exhibit R-2 (PE 0604384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>MB5</b>
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 6304 JVAP - Smallpox Vaccine (Vaccinia Immune Globulin-VIG component) - Began manufacture of consistency lots and revalidation of Plaque Reduction Neutralization (PRN) assay for VIG.</li> <li>• 980 JVAP - Pentavalent Botulinum Toxoid - Continued serologies and data analysis of the Pentavalent Botulinum Toxoid booster study to validate surrogate marker concept.</li> <li>• 4088 JVAP - Prime Systems Contract - Conducted Systems Integration, Earned Value Management System (EVMS), special studies, regulatory compliance, and quality assurance for all vaccine efforts.</li> <li>• 2600 JVAP - Investigational New Drug (IND) Stockpile Assessment - Conducted safety and efficacy testing and maintenance of the IND inventory produced by The Salk Institute-Government Services Division. Conducted an in-depth analysis of the character and history of this material that identified numerous regulatory and testing deficiencies when viewed from a contingency use perspective.</li> <li>• 1800 JVAP - Integrated Digital Environment (IDE) - Conducted extensive independent test and evaluation of numerous electronic data management software applications. Testing was conducted to ensure selection of electronic data management system that meets both DoD 5000 requirements for an IDE and FDA (21 Code of Federal Regulations) requirements for data integrity and security that will result in validated electronic filing of INDs and BLAs.</li> </ul> <p><b>Total</b>      15772</p>		
<div>Project MB5</div> <div>Page 95 of 113 Pages</div> <div>Exhibit R-2 (PE 0604384BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>MB5</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>6848 JBAIDS - Initiate design improvements of units transitioning from Defense Technology Objective (DTO) and begin fabrication of Engineering Development Test (EDT) units. Conduct Engineering Development Test.</li> <li>815 JBAIDS - Initiate submission of Identification Assays to the Food and Drug Administration (FDA) for regulatory approval.</li> <li>2650 JBAIDS - Design and produce four (4) JBAIDS biological organism Identification Assays. Initiate Integrated Logistics Support (ILS) analysis development and technical drawings package requirements. Initiate development of technical manuals.</li> <li>2345 VP-GOCO - Evaluate options for establishment of a government owned contractor operated vaccine production facility.</li> <li>19463 JVAP - Smallpox Vaccine - Continue consistency lot manufacture and conduct stability testing for Smallpox vaccine. Initiate Phase 2b clinical trial for Smallpox vaccine.</li> <li>7884 JVAP - Smallpox Vaccine (VIG component) - Develop manufacturing capability for VIG and initiate BLA process.</li> <li>3778 JVAP - Pentavalent Botulinum Toxoid - Complete serologies and data analysis of the Pentavalent Botulinum Toxoid booster study and prepare final report for submission to the FDA.</li> <li>3897 JVAP - Prime Systems Contract activities - Conduct systems integration, EVMS, IDE initiatives, special studies, regulatory compliance, and quality assurance for all vaccine efforts.</li> <li>820 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	48500	
<div> <div>Project MB5</div> <div>Page 96 of 113 Pages</div> <div>Exhibit R-2 (PE 0604384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	PROJECT <b>MB5</b>
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 2850 JBAIDS - Continue design and production of six (6) additional JBAIDS biological organism Identification Assays. Continue FDA regulatory approval process of system equipment.</li> <li>• 1264 JBAIDS - Complete requirements for FDA regulatory approval of ten (10) assays. Complete Integrated Logistics Support (ILS) analysis and technical drawings package requirements. Complete technical manual development.</li> <li>• 6171 JBAIDS - Initiate Low Rate of Initial Production (LRIP) of thirty (30) JBAIDS units. Perform Production Qualification Testing (PQT) and Initial Operational Test and Evaluation (IOT&amp;E). Modify and fabricate test systems and software.</li> <li>• 30549 JVAP - Smallpox Vaccine - Complete reproductive toxicology studies for Smallpox vaccine. Continue Smallpox and Vaccinia Immune Globulin (VIG) stability studies. Initiate 2nd and 3rd stages of a three-part Phase 2b large-scale clinical trial (safety and immunogenicity study for &gt;3000 subjects) for Smallpox vaccine to satisfy FDA requirement for licensure.</li> <li>• 969 JVAP - Smallpox Vaccine - Achieve baseline stockpile quantities and begin warm base lot manufacturing (assuring a continuous manufacturing capability) for both Smallpox vaccine and VIG.</li> <li>• 2915 JVAP - Smallpox Vaccine - Begin BLA preparation and compilation. Continue IND annual reports and manufacturing amendments for Smallpox vaccine and VIG.</li> </ul>		
<b>Total</b>	44718	
<div>Project MB5</div> <div>Page 97 of 113 Pages</div> <div>Exhibit R-2 (PE 0604384BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>																						
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>MB5</b>																					
<b>B. <u>Other Program Funding Summary:</u></b> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 8%;"><u>FY 2001</u></th> <th style="width: 8%;"><u>FY 2002</u></th> <th style="width: 8%;"><u>FY 2003</u></th> <th style="width: 8%;"><u>FY 2004</u></th> <th style="width: 8%;"><u>FY 2005</u></th> <th style="width: 8%;"><u>FY 2006</u></th> <th style="width: 8%;"><u>FY 2007</u></th> <th style="width: 8%;"><u>To Compl</u></th> <th style="width: 8%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT</td> <td style="text-align: center;">50629</td> <td style="text-align: center;">55684</td> <td style="text-align: center;">43695</td> <td style="text-align: center;">57626</td> <td style="text-align: center;">62250</td> <td style="text-align: center;">58108</td> <td style="text-align: center;">58841</td> <td style="text-align: center;">Cont</td> <td style="text-align: center;">Cont</td> </tr> </tbody> </table>											<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>	JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	50629	55684	43695	57626	62250	58108	58841	Cont	Cont
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Compl</u>	<u>Total Cost</u>																				
JX0005 DOD BIOLOGICAL VACCINE PROCUREMENT	50629	55684	43695	57626	62250	58108	58841	Cont	Cont																				
<p><b>C. <u>Acquisition Strategy:</u></b> JVAP: The Prime Systems Contract (PSC) serves as the integrator for the advanced development, licensure, production, storage, testing, and distribution of medical biological defense vaccines and antisera. The PSC serves as the "responsible head" to the Food and Drug Administration for each product during the licensure process and becomes the license holder for the product. The JVAP oversees the PSC.</p> <p>JBAIDS is an evolutionary development program. Block I development effort will focus on militarizing and hardening of critical identification technologies selected from the Common Diagnostics Defense Technology Objective (CB.26.J00). This will be a rapid development and fielding effort to deliver to the field a critical capability to identify bacteria and viral agents. FDA approval for the initial set of gene probes, primers, and hardware will be coordinated and obtained. Block II will focus on the automation of the sample preparation process, inclusion of new technologies for toxin development, reductions in size, weight and reliability. FDA approval for all remaining gene probe and primer sets will be obtained.</p>																													
<div style="display: flex; justify-content: space-between;"> <span>Project MB5</span> <span>Page 98 of 113 Pages</span> <span>Exhibit R-2 (PE 0604384BP)</span> </div>																													

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>					PROJECT <b>MB5</b>

<b>D. <u>Schedule Profile:</u></b>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JBAIDS																																
Block I RFP Release												2Q																				
Block I Flyoff												3Q																				
Procure Systems for EDT/DT													1Q	2Q																		
Engineering Design Test (EDT)/Developmental Testing (DT)													2Q	—	4Q																	
Low Rate Initial Production														4Q	1Q																	
Initial Operational Test and Evaluation (IOT&E)															1Q	—	3Q															
VAC BOT																																
Consistency Lot Production																													1Q	—	4Q	
Baseline Stockpile Quantities Obtained																														4Q		
VAC NGA																																
Consistency Lot Production																			4Q	—	4Q											
Phase 2b Clinical Trials																													2Q	—	4Q	
Baseline Stockpile Quantities																													4Q			
VAC PLG																																
Consistency Lot Production																													1Q	—	4Q	
VAC SPX																																

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# CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE  
February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

MB5

## D. Schedule Profile (cont):

D. <u>Schedule Profile (cont):</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
VAC SPX (Cont)																																
Milestone C									1Q																							
Consistency Lot Production								4Q	<del>2Q</del>																							
Phase 2b Clinical Trial									3Q	<del>1Q</del>					1Q																	
Baseline Stockpile Quantities Obtained													2Q																			
Biological Licensure Application (BLA) Submission															3Q																	
FDA Licensure/Full Rate Production IPR																			2Q													
VAC TUL																																
Milestone C																			2Q													
Consistency Lot Production																			2Q	3Q												
Phase 2b Clinical Trial																			4Q	<del>1Q</del>												
Baseline Stockpile Quantities Obtained																			3Q													
Biological Licensure Application (BLA) Submission																												4Q				
VACCINES																																
Botulinum Toxoid Booster Study	>>	<del>1Q</del>	<del>2Q</del>	<del>3Q</del>	<del>4Q</del>				4Q																							

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>MB5</b>		

I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS													
HW C - Design/Fabricate EDT Units	PO	TBS	U	0	0	NONE	4754	Jan-02	0	NONE	0	4754	0
SW SB - Design/fabricate Identification Assays	PO	TBS	U	0	0	NONE	2000	Jan-02	2350	Nov-02	0	4350	0
SW SB - FDA Submission and Regulatory Approval of Assays	Various	TBS	U	0	0	NONE	754	Jan-02	1000	Nov-02	0	1754	0
SW SB - Modify and Fabricate Test Systems	PO	TBS	U	0	0	NONE	0	NONE	2420	Nov-02	0	2420	0
HW SB - FDA Submission and Regulatory Approval of Equipment	Various	TBS	U	0	0	NONE	0	NONE	500	Nov-02	0	500	0
VACCINES													
HW S - Vaccine Development - Includes Consistency Lot, Pilot Lot, and Scale-up Production	SS/CPAF	DynPort Vaccine Company, Frederick, MD	C	3023	3078	Nov-00	9310	Nov-01	0	NONE	0	15411	0
Subtotal I. Product Development:				3023	3078		16818		6270		0	29189	
Remarks: Biological Vaccines - Cost to Complete: "Continuing"													

## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>MB5</b>		

II. Support Costs	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS													
TD/D SB - Update/Develop TDPs, Performance Specs, Drawings, and Reports	Various	TBS	U	0	0	NONE	300	Jan-02	150	Nov-02	0	450	0
TD/D SB - LSA Development/Technical Drawing Package	Various	TBS	U	0	0	NONE	350	Jan-02	114	Nov-02	0	464	0
VAC SPX													
TD/D S - Vaccine Development - Includes Regulatory Integration (Environmental and FDA Documentation) and Delivery System.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	625	Nov-02	0	625	0
VACCINES													
TD/D S - Vaccine Development - Includes Process Definition, Environmental and FDA Documentation	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	1468	2805	Nov-00	4735	Nov-01	0	NONE	0	9008	0
Subtotal II. Support Costs:				1468	2805		5385		889		0	10547	
Remarks: Biological Vaccines - Cost to Complete: "Continuing"													

## UNCLASSIFIED

## CBDP PROJECT COST ANALYSIS (R-3 Exhibit)

DATE

February 2002

BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

BA5 - Engineering and Manufacturing Dev

PE NUMBER AND TITLE

0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)

PROJECT

MB5

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS													
DTE C - Conduct EDT	Various	TBS	U	0	0	NONE	2005	Jan-02	0	NONE	0	2005	0
OTHT SB - PQT/IOT&E	PO	TBS	U	0	0	NONE	0	NONE	2000	Nov-02	0	2000	0
OTE S - JBAIDS Block I LRIP	C/FFP	TBS	C	0	0	NONE	0	NONE	1601	Jan-03	0	1601	0
VAC SPX													
DTE S - Vaccine Development - Testing, Evaluation, and Clinical Trials.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	21547	Nov-02	0	21547	0
VACCINES													
OTHT SB - Vaccine Development - Includes Phase I/II Clinical and Non-clinical Trials, Tox Studies, Surrogate and Assay Testing	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	3541	3112	Nov-00	11019	Nov-01	0	NONE	0	17672	0
OTHT SB - Pentavalent Botulinum Toxoid - Booster Study	C/CPFF	Battelle Memorial Inst., Columbus, OH	C	1343	770	Mar-01	576	Mar-02	0	NONE	0	2689	0
OTHT S - Vaccine Development - Includes Stability and Efficacy Testing	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	605	1155	Nov-00	1950	Nov-01	0	NONE	0	3710	0
Subtotal III. Test and Evaluation:				5489	5037		15550		25148		0	51224	

Remarks: Biological Vaccines - Cost to Complete: "Continuing"

## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)											DATE February 2002		
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev					PE NUMBER AND TITLE 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)						PROJECT MB5		
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
JBAIDS													
PM/MS S - Program Management and Program Manager Support	Various	Joint Program Office for Biological Defense, Falls Church, VA	U	0	0	NONE	150	1Q FY02	150	1Q FY03	0	300	0
VAC PRD FA													
PM/MS S - Program Management and Program Manager Support	Allot	TBS	U	0	0	NONE	2345	2Q FY02	0	NONE	0	2345	0
VAC SPX													
PM/MS S - Vaccine Development - Program Management/Program Manager Support.	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	3871	Nov-02	0	3871	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program Management Office	Allot	JVAP, Frederick, MD	U	0	0	NONE	0	NONE	1432	Oct-02	0	1432	0
PM/MS S - Vaccine Development - Program Management/Program Manager Support	Allot	PEOCBD, Falls Church, VA	U	0	0	NONE	0	NONE	2422	Oct-02	0	2422	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	Camber Corporation, Frederick, MD	C	0	0	NONE	0	NONE	731	Feb-03	0	731	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/CPFF	SAIC, Frederick, MD	C	0	0	NONE	0	NONE	479	Feb-03	0	479	0
Project MB5													
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Exhibit R-3 (PE 0604384BP)													

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## UNCLASSIFIED

CBDP PROJECT COST ANALYSIS (R-3 Exhibit)										DATE February 2002			
BUDGET ACTIVITY RDT&E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev					PE NUMBER AND TITLE 0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)						PROJECT MB5		
IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PM/MS S - Award Fee (12.5%)	C/CPAF	DynPort Vaccine Company, Frederick, MD	C	0	0	NONE	0	NONE	3326	Jan-03	0	3326	0
VACCINES													
PM/MS S - Contractor Systems Engineering/Program Management Support.	C/FP	Camber Corporation, Frederick, MD	C	1062	984	Feb-01	1535	Feb-02	0	NONE	0	3581	0
PM/MS S - Vaccine Development - Joint Vaccine Acquisition Program - Program Management Office	Various	JVAP, Fort Detrick, MD	U	1513	973	1Q FY01	1612	1Q FY02	0	NONE	0	4098	0
PM/MS S - Contractor systems engineering/program management support.	C/FP	SAIC, Frederick, MD	C	330	375	1Q FY01	394	1Q FY02	0	NONE	0	1099	0
PM/MS S - Program Management and Program Manager Support	Various	Joint Program Office for Biological Defense, Falls Church, VA	U	1061	1505	Oct-00	2860	Oct-01	0	NONE	0	5426	0
PM/MS S - Contractor Systems Engineering/Program Management Support.	Various	Camber Corporation, Falls Church, VA	C	1000	1015	Oct-00	1031	Oct-01	0	NONE	0	3046	0
ZSBIR													
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	820	2Q FY02	0	NONE	0	820	0
<div>Project MB5</div> <div>Page 105 of 113 Pages</div> <div>Exhibit R-3 (PE 0604384BP)</div>													

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## UNCLASSIFIED

<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>									PROJECT <b>MB5</b>
IV. Management Services - Cont.	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Subtotal IV. Management Services:				4966	4852		10747		12411		0	32976		
Remarks: Biological Vaccines - Cost to Complete: "Continuing"														
TOTAL PROJECT COST:				14946	15772		48500		44718		0	123936		

Project MB5
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>				PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>				PROJECT <b>MC5</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
MC5 MEDICAL CHEMICAL DEFENSE (EMD)	1050	1463	1973	1486	1448	1727	1763	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project MC5 MEDICAL CHEMICAL DEFENSE (EMD):** This project funds the development of medical materiel and other medical equipment items necessary to provide an effective capability for medical defense against chemical agent threats facing U.S. forces in the field. This project supports research efforts in the Production and Deployment phases of the acquisition strategy for pretreatment therapeutic drugs, diagnostic equipment, and other life support equipment for protection against and management of chemical warfare agents. Project funds research and development of safety studies, manufacturing scale up, process validation, drug interaction, performance test and submission of FDA drug licensure application(s).

**FY 2001 Accomplishments:**

- 141 Pyridostigmine Bromide - Continued a 2-year study to validate surrogate markers in small animal ex vivo muscle for human efficacy.
- 74 Pyridostigmine Bromide - Conducted storage and stability testing, and submitted support documentation for FDA licensure.
- 352 Pyridostigmine Bromide - Started three 2-year studies to validate surrogate markers for human efficacy. (Human ex vivo muscle study, human ex vivo blood study, and higher animal species ex vivo study) .

Project MC5
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Exhibit R-2 (PE 0604384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>MC5</b>

**FY 2001 Accomplishments (Cont):**

- 418 Skin Exposure Reduction Paste Against Chemical Warfare Agent (SERPACWA) - Validated manufacturing process.
- 65 Multichambered Autoinjector - Submitted support documentation for FDA licensure.

**Total** 1050

**FY 2002 Planned Program:**

- 65 Pyridostigmine Bromide - Continue storage and stability testing.
- 382 Pyridostigmine Bromide - Continue three 2-year studies to validate surrogate markers for human efficacy. (Human ex vivo muscle study, human ex vivo blood study, and higher animal species ex vivo study) .
- 50 Pyridostigmine Bromide - Complete a 2-year study to validate surrogate markers in small animal ex vivo muscle for human efficacy.
- 703 SERPACWA - Complete FDA manufacturing requirements.
- 238 Multichambered Autoinjector - Conduct a Milestone III in-process review.
- 25 SBIR - Small Business Innovative Research.

**Total** 1463

**FY 2003 Planned Program:**

- 588 Pyridostigmine Bromide - Complete storage and stability testing and complete FDA required additional studies.

Project MC5

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>	PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>	
		PROJECT <b>MC5</b>

**FY 2003 Planned Program (Cont):**

- 50 Pyridostigmine Bromide - Complete three 2-year studies to validate surrogate markers for human efficacy. (Human ex vivo muscle study, human ex vivo blood study, and higher animal species ex vivo study).
- 1335 Advanced Anticonvulsant - Initiate 2-year clinical study to evaluate the advanced anticonvulsant for the treatment of seizures.

**Total** 1973

**B. Other Program Funding Summary:** N/A

**C. Acquisition Strategy:**

Multi Autoinjector	In-house/contractor development to FDA licensure, followed by sole source procurement.
Pyrido Bromide	In-house/contractor development to FDA licensure, followed by sole source procurement.
Adv Anticonvuls	In-house/contractor development to FDA licensure, followed by sole source procurement.
SERPACWA	In-house/contractor development to FDA licensure, followed by sole source procurement.

Project MC5

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Exhibit R-2 (PE 0604384BP)

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA5 - Engineering and Manufacturing Dev**

PE NUMBER AND TITLE

**0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)**

PROJECT

**MC5****D. Schedule Profile:**

D. <u>Schedule Profile:</u>	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
MEDCHEM																																
Advanced Anticonvulsant - Milestone II													3Q																			
Multichambered Autoinjector - Milestone III												4Q																				
SERPACWA - Milestone III				4Q																												

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>							PROJECT <b>MC5</b>	
I. Product Development	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MEDCHEM													
HW S - Sample Packaging and Manufacturing Validation of SERPACWA	C/CPFF	McKesson BioServices, Rockville, MD	C	0	418	1Q FY01	704	1Q FY02	0	NONE	0	1122	0
HW S - Support Documentation for FDA Licensure of Multichambered Autoinjector	C/CPFF	EER, Inc, Chantilly, VA	C	0	65	1Q FY01	0	NONE	0	NONE	0	65	0
Subtotal I. Product Development:				0	483		704		0		0	1187	
Remarks:													
II. Support Costs: Not applicable													
Project MC5													
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Exhibit R-3 (PE 0604384BP)													

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>			
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>						PROJECT <b>MC5</b>		
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract
<b>MEDCHEM</b>													
DTE S - Pyridostigmine Bromide - Surrogate Validation	Allot	USA Medical Research Institute of Chemical Defense, Edgewood, MD	U	0	141	1Q FY01	200	1Q FY02	50	1Q FY03	0	391	0
DTE S - FDA Required Studies for Multichambered Autoinjector	C/CPFF	Meridian Medical Technologies, Columbia, MD	C	0	0	NONE	238	1Q FY02	412	1Q FY03	0	650	0
DTE S - Bioequivalence Study for Advanced Anticonvulsant	C/CPFF	TBS	C	0	0	NONE	0	NONE	923	1Q FY03	0	923	0
DTE S - Stability Test for Pyridostigmine Bromide	C/CPFF	Stanford Research International, Palo Alto, CA	C	0	74	1Q FY01	65	1Q FY02	588	1Q FY03	0	727	0
DTE S - Validate Surrogate Markers in Ex Vivo Muscle - Pyridostigmine Bromide	C/CPAF	University of California, Davis, CA	C	0	140	4Q FY01	0	NONE	0	NONE	0	140	0
DTE S - Higher Animal Species Ex Vivo Study - Pyridostigmine Bromide	SS/FFP	DTSL Chemical & Biological Sciences, United Kingdom	C	0	212	4Q FY01	231	1Q FY02	0	NONE	0	443	0
Subtotal III. Test and Evaluation:				0	567		734		1973		0	3274	
Remarks:													

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<b>CBDP PROJECT COST ANALYSIS (R-3 Exhibit)</b>										DATE <b>February 2002</b>				
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA5 - Engineering and Manufacturing Dev</b>					PE NUMBER AND TITLE <b>0604384BP CHEMICAL/BIOLOGICAL DEFENSE (EMD)</b>								PROJECT <b>MC5</b>	
IV. Management Services	Contract Method & Type	Performing Activity & Location	US NF CC	Total PYs Cost	FY2001 Cost	FY2001 Award Date	FY2002 Cost	FY2002 Award Date	FY2003 Cost	FY2003 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
ZSBIR														
SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	HQ AMC, Alexandria, VA	U	0	0	NONE	25	2Q FY02	0	NONE	0	25	0	
Subtotal IV. Management Services:				0	0		25		0		0	25		
Remarks:														
TOTAL PROJECT COST:					0	1050		1463		1973		0	4486	

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## **BUDGET ACTIVITY 6**



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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - Management Support**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Budget Activity (BA) Cost	33866	31052	42959	36530	34495	39520	40086	Continuing	Continuing
0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)	27236	31052	42959	36530	34495	39520	40086	Continuing	Continuing
0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6630	0	0	0	0	0	0	0	6630

**A. Mission Description and Budget Activity Justification:** This program element provides research, development, test, and evaluation management support to the Department of Defense (DoD) Nuclear, Biological and Chemical (NBC) defense program.

This effort includes support to the DoD response to Chemical/Biological (CB) terrorism; funds joint doctrine and training support; funds sustainment of technical test capability at Dugway Proving Ground (DPG); and funds financial/program management support. Additionally, this program element funds the Joint Point Test program (O49), which provides a response to Commanders in Chief (CINCs) and the Services regarding joint tests and research assessments.

Anti-terrorism funding provides DoD with a process and means to conduct assessments of installation vulnerabilities to CB threats.

Weapons of Mass Destruction Civil Support Teams (WMD CST) funding provides the resources for program oversight and program management to successfully execute the Consequence Management RDA program. WMD CSTs and U.S. Army Reserve Reconnaissance and Decontamination Teams would receive the systems developed and procured under this program in accordance with the Joint Service Agreement for Chemical and Biological Defense Program Management.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/****BA6 - Management Support**

Joint Training and Doctrine Support funds development of Joint Doctrine and Tactics, Techniques, and Procedures for developing Chemical Biological defense systems. The Training and Doctrine efforts also fund chemical and biological modeling and simulation to support the warfighter.

Dugway Proving Ground, a Major Range and Test Facility Base (MRTFB), funding provides for Chemical Biological Defense (CBD) testing of DoD materiel, equipment, and systems from concept through production; to include a fully instrumented outdoor range capability for testing with simulants that can be precisely correlated to the laboratory testing with live agents. It finances indirect test operating costs not billable to test customers, including indirect civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

The Homeland Security management program is focused on supporting technology efforts in conducting tradeoff studies, conducting studies exploring technology alternatives, defining Homeland Security requirements, and providing management oversight of the Homeland Security program.

The management support program provides management support for the DoD NBC defense program to allow program overview and integration of overall medical and non-medical programs by the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological (ATSD(NCB)), through the Office of the Secretary of Defense (OSD), Office of Deputy Assistant to the Secretary of Defense for Chemical/Biological Defense (DATSD (CBD)); execution management by the Defense Threat Reduction Agency (DTRA); integration of Joint requirements, management of training and doctrine by the Joint Service Integration Group (JSIG); Joint Research, Development and Acquisition (RDA) planning, input to annual report to Congress and Program Objective Memorandum (POM) Strategy development by the Joint Service Materiel Group (JSMG); review of the JSIG and JSMG joint plans and the consolidated NBC Defense POM Strategy by the Joint NBC Defense Board (JNBCDB) Secretariat.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

## BUDGET ACTIVITY

**RD&E DEFENSE-WIDE/****BA6 - Management Support**

The Joint Point Test program (O49) funds provide planning, conducting, evaluating, and reporting on joint tests (for other than developmental hardware) and accomplishment of operational research assessments in response to requirements received from the Services and the Commanders in Chief (CINCs) for already fielded equipment and systems.

This Budget Activity also funds the Small Business Innovative Research (SBIR) program. The overall objective of the Chemical/Biological Defense (CBD) SBIR program is to improve the transition or transfer of innovative CBD technologies between Department of Defense (DoD) components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment (identification, modeling, and intelligence); contamination avoidance; and protection of both individual soldiers and equipment.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - Management Support****0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT  
SUPPORT)**

COST (In Thousands)		FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost		27236	31052	42959	36530	34495	39520	40086	Continuing	Continuing
AT6	ANTI-TERRORISM	443	457	460	463	486	512	522	Continuing	Continuing
CM6	WMD - CIVIL SUPPORT TEAM (MANAGEMENT SUPPORT)	0	0	1600	1600	1600	1600	1600	Continuing	Continuing
DT6	JOINT DOCTRINE AND TRAINING SUPPORT	3108	3278	6098	6039	3495	6073	6193	Continuing	Continuing
DW6	DUGWAY PROVING GROUND	9732	15315	15651	15156	15442	16922	17164	Continuing	Continuing
HS6	HOMELAND SECURITY (MANAGEMENT SUPPORT)	0	0	6000	0	0	0	0	0	6000
MS6	MANAGEMENT SUPPORT	12482	9015	10152	10282	10485	11415	11613	Continuing	Continuing
O49	JOINT POINT TEST	1471	2987	2998	2990	2987	2998	2994	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This program element provides research, development, testing and evaluation management support to the Department of Defense (DoD) NBC defense program.

This effort includes support to the DoD response to Chemical/Biological (CB) terrorism; funds joint doctrine and training support; funds sustainment of technical test capability at Dugway Proving Ground (DPG); and funds financial/program management and oversight function as mandated by P.L. 103-160. Additionally, this program element funds the Joint Point Test program (O49), which provides a response to Commanders in Chief (CINCs) and Services regarding joint tests and research assessments.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

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## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - Management Support****0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT  
SUPPORT)**

Anti-terrorism funding provides DoD with a process and means to conduct assessments of installation vulnerabilities to Chemical/Biological threats.

Joint Training and Doctrine Support funds development of Joint Doctrine and Tactics, Techniques, and Procedures for developing Chemical Biological defense systems. The Training and Doctrine efforts also fund chemical and biological modeling and simulation to support the warfighter.

Dugway Proving Ground, a Major Range and Test Facility Base (MRTFB), funding provides for Chemical Biological Defense testing of DoD materiel, equipment, and systems from concept through production; to include a fully instrumented outdoor range capability for testing with simulants that can be precisely correlated to the laboratory testing with live agents. It finances indirect test operating costs not billable to test customers, including indirect civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

The Homeland Security management program is focused on supporting technology efforts in conducting tradeoff studies, conducting studies exploring technology alternatives, defining Homeland Security requirements, and providing management oversight of the biological counterterrorism research program and biological defense program for Homeland Security.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

## BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - Management Support****0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT  
SUPPORT)**

The management support program provides management support for the DoD Nuclear, Biological and Chemical (NBC) defense program to allow program overview and integration of overall medical and non-medical programs by the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological (ATSD(NCB)), through the Office of the Secretary of Defense (OSD), Office of Deputy Assistant to the Secretary of Defense for Chemical/Biological Defense (DATSD (CBD)); execution management by the Defense Threat Reduction Agency (DTRA); integration of Joint requirements, management of training and doctrine by the Joint Service Integration Group (JSIG); Joint Research, Development and Acquisition (RDA) planning, input to annual report to Congress and Program Objective Memorandum (POM) Strategy development by the Joint Service Materiel Group (JSMG); review of the JSIG and JSMG joint plans and the consolidated NBC Defense POM Strategy by the Joint NBC Defense Board (JNBCDB) Secretariat.

The Joint Point Test program (O49) funds provide funding, planning, conducting, evaluating, and reporting on joint tests (for other than developmental hardware) and accomplishment of operational research assessments in response to requirements received from the Services and the Commanders in Chief (CINCs) for already fielded equipment and systems.

**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**DATE  
**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - Management Support****0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT  
SUPPORT)****B. Program Change Summary:**

		<u><b>FY 2001</b></u>	<u><b>FY 2002</b></u>	<u><b>FY 2003</b></u>
Previous President's Budget (FY 2002 PB)		23686	31276	31754
Appropriated Value		23907	31276	0
Adjustments to Appropriated Value		0	0	0
a. Congressional General Reductions		-168	-224	0
b. SBIR/STTR		-397	0	0
c. Omnibus or Other Above Threshold Reductions		0	0	0
d. Below Threshold Reprogramming		0	0	0
e. Rescissions		-53	0	0
Adjustments to Budget Years Since FY 2002 PB		3706	0	11205
Current Budget Submission (FY 2003 PB)		27236	31052	42959

**Change Summary Explanation:**

**Funding:** FY03 - Increase to management support to fund a Homeland Security Support effort identified in the new Project HS6 (+\$6,000K); increase to provide for management support of the WMD Civil Support Teams (CSTs) in the new project CM6 (+\$1,600K); increase to JSMG Management for additional mission (MS6 \$1,000K); increase for Joint Training and Doctrine Support (DT6 \$2,774K); adjustment for inflation assumptions (-\$169K).

**Schedule:****Technical:****C. Other Program Funding Summary:** See section B in the R2A's



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>				PROJECT <b>AT6</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
AT6      ANTI-TERRORISM	443	457	460	463	486	512	522	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project AT6 ANTI-TERRORISM:** The growing threat of the use of Chemical/Biological (CB) agents in acts of terrorism places DoD installations and personnel at a higher risk. With that in mind, this budget item provides DoD with the means to address the threat of CB terrorism to DoD installations and personnel. It attempts to address the requirements identified in PDD 39 and PDD 62. Funding was originally added in response to DoD Directive 2000.12, "DoD Combating Terrorism Program," dated September 15, 1996 (updated April 13, 1999) and the Downing Task Force Report, "Global Interests/Global Responsibilities," dated September 16, 1996. Funding provides for the development of combating CB terrorism planning, training, and exercise technologies; and the sustainment of those technologies in the out years, as appropriate. Sponsors of projects funded under this budget item would include DTRA, J-34, ASD (SO/LIC), SBCCOM, USA CMLS, the Technical Support Working Group, and other organizations involved with combating CB terrorism.

**FY 2001 Accomplishments:**

- 256    Developed and conducted Weapons of Mass Destruction (WMD) Installation Emergency Responder Pilot Training Course.
- 187    Conducted Front End Analysis of Consequence Management RDA requirements.

**Total**            443

Project AT6
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Exhibit R-2 (PE 0605384BP)

**UNCLASSIFIED**

## CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE \_\_\_\_\_

February 2002

## BUDGET ACTIVITY

RDT&amp;E DEFENSE-WIDE/

## BA6 - Management Support

0605384BP CHEMICAL/BIOLOGICAL DEFENSE

**(MANAGEMENT SUPPORT)**

PROJECT

## AT6

**FY 2002 Planned Program:**

- 449 Sustain combating CB terrorism technology development and support planning for CB Installation Protection Program.
- 8 SBIR - Small Business Innovative Research.

<b>Total</b>	457
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### **FY 2003 Planned Program:**

- 460 Sustain combating CB terrorism technology development and document lessons learned on Force Protection.

<b>Total</b>	460
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**UNCLASSIFIED**

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>					
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>				PROJECT <b>CM6</b>				
COST (In Thousands)				FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
CM6	WMD - CIVIL SUPPORT TEAM (MANAGEMENT SUPPORT)			0	0	1600	1600	1600	1600	1600	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project CM6 WMD - CIVIL SUPPORT TEAM (MANAGEMENT SUPPORT):** This funding provides the resources for program management funds to successfully execute the Consequence Management RDA program and provide oversight functions as mandated by P.L. 103-160. WMD CSTs and U.S. Army Reserve Reconnaissance and Decontamination Teams would receive the systems developed and procured under this program in accordance with the Joint Service Agreement for Chemical and Biological Defense Program Management.

**FY 2001 Accomplishments: None**

**FY 2002 Planned Program: No planned program**

**FY 2003 Planned Program:**

- 500 WMD CST- Support planning and oversight efforts for Inter Agency Board (IAB) to coordinate inter agency equipment and operational issues to ensure WMD CST teams interoperability with state and local first responders.
- 1100 WMD CST - Support planning and operations for 32 WMD CST operations and additional State and national emergency teams. Conduct inter agency equipment integration analysis and interoperability studies.

**Total**            1600

Project CM6
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Exhibit R-2 (PE 0605384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>				PROJECT <b>DT6</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
DT6      JOINT DOCTRINE AND TRAINING SUPPORT	3108	3278	6098	6039	3495	6073	6193	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project DT6 JOINT DOCTRINE AND TRAINING SUPPORT:** The activities of this project directly support the Joint Service Chemical/Biological (CB) Defense program; in particular, the Joint Service Integration Group (JSIG), Doctrine and Training (DT), and Modeling & Simulation (M&S). This effort funds (1) development/revision of medical and non-medical Multi-Service and Joint Doctrine and Tactics, Techniques, and Procedures (TTP); (2) development of joint medical, non-medical and M&S requirements; (3) the US Army Chemical School (USACMLS) Joint Senior Leaders' Course (JSLC); (4) assistance in correcting training and doctrine deficiencies covered in General Accounting Office (GAO) reports; and (5) support of current and planned NBC Defense studies, analysis, models and simulations, training, exercises, and wargames; determine overlaps, duplication, and shortfalls; and build and execute programs to correct shortfalls in all aspects of NBC Defense.

Project DT6
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Exhibit R-2 (PE 0605384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DT6</b>
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li> <p>1473 JSIG DT - Continued to support the development of medical, non-medical, and special operations Multi-Service core NBC doctrine: (1) FM 3-11.4 NBC Protection Multi-service Tactics, Techniques, and Procedures (MTTP); (2) FM 3-11.19 NBC Reconnaissance; FM 8-285 Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries. Continued to support the integration of Chemical/Biological Defense (CBD) considerations during the revision and development of selected joint doctrinal materials. Continued support to the integration and enhancement of NBC/WMD materials in joint and service professional education. Continued support to the CINCs with NBC/WMD exercise assistance and training. Drafted/reviewed Joint Operational Requirements Documents (ORDs): (1) Joint Biological Standoff Detection System Milestone MS A; (2) Joint Service Air Crew Mask MS B; (3) Joint Service General Purpose Mask MS B; (4) Joint Service Mask Leakage Tester MS B; (5) Joint Effects Model (Draft); (6) Joint Biological Tactical Detection System MS A; (7) Joint Ground Effects Model (Draft); (8) Joint Multi-Mission Advanced NBC Sensor (Draft); (9) Joint Service Lightweight Chemical Agent Detector MS III; (10) Joint Biological Point Detection System Block II; (11) Joint Biological Agent Identification and Diagnostic System MS I; (12) Smallpox MS B; (13) Plague Tularemia (Draft); (14) Joint Medical NBC Decision Support Tool (Draft); (15) Next Generation Anthrax (Draft). Completed assessment of smallpox vaccine stockpile. Initiated assessment of Plague and Anthrax stockpile requirements. Conducted medical risk assessment.</p> </li> <li> <p>450 JSIG DT - Continued NBC requirements generation analysis: (1) Completed Chemical Contamination Avoidance Mission Area Analysis; (2) Initiated integrated NBC Contamination Avoidance Mission Area Analysis; (3) Initiated Fourth Generation Agent Operational Impact Assessment; (4) Completed Joint Biological Point Detection System requirements analysis.</p> </li> <li> <p>50 JSIG DT - Continued to support additional joint participation in the Joint Senior Leaders' Course (JSLC).</p> </li> </ul>		
Project DT6	Page 12 of 34 Pages	Exhibit R-2 (PE 0605384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DT6</b>
<b>FY 2001 Accomplishments (Cont):</b> <ul style="list-style-type: none"> <li>1135 JSIG MODSIM - Continued to support Services M&amp;S requirements through development of requirements documentation and the integration of M&amp;S data model requirements. Finalized and published M&amp;S Master Plan, Mission Needs Statement (MNS), Operations Requirements Document/Capstone Requirements Document (ORD/CRD). Initiated requirements validation through joint experiments and exercise/war games participation. Developed Chemical Downwind Message (CDM) framework, methodology, and quality assurance criteria to standardize CBD data used for joint acquisition, training, and mission planning and rehearsal, using modeling and simulation. Began development of Common Model Mission Space (CMMS) to characterize the effects and behaviors on operations and personnel.</li> </ul>		
<b>Total</b>	3108	
<div>Project DT6</div> <div>Page 13 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DT6</b>
<p><b>FY 2002 Planned Program:</b></p> <ul style="list-style-type: none"> <li>1673 JSIG DT - Continue to support the development of medical, non-medical and special operations Multi-Service core NBC doctrine: (1) FM 3-11.14 NBC Vulnerability Analysis; (2) FM 3-11.9 Potential Military Chemical/Biological Agents and Compounds; (3) FM 4-02.7 Health Service Support in a NBC Environment. Continue to support the integration of Chemical/Biological Defense (CBD) considerations during the revision and development of selected joint doctrinal materials. Continue support to the integration and enhancement of NBC/WMD materials in joint and service professional education. Continue support to the CINCs with NBC/WMD exercise assistance and training. Draft/review joint Operational Requirements Documents (ORDs): (1) Joint Chemical &amp; Biological Agent Water Monitor Milestone (MS) A; (2) Joint Chemical Environment Survivability Mask MS B; (3) Joint Container Refill System MS B; (4) Artemis (Draft); (5) Joint Effects Model/Joint Ground Effect Model (Draft); (6) Joint Operational Effects Model MS A; (7) Virtual Prototyping Simulation (Draft); (8) Training Simulation Capability (Draft); (9) Joint Collective Protection Equipment and Improvement (Draft); (10) Joint Transportable Collective Protection System MS B; (11) Joint Service Sensitive Equipment Decontamination MS B; (12) Automatic Casualty Decontamination System (Draft); (13) Visible Casualty Agent Detection System (Draft). Complete assessment of plague and anthrax stockpile. Initiate assessment of Tularemia stockpile requirements.</li> <li>475 JSIG DT - Continue NBC requirements generation analysis: (1) Initiate Protection (Collective/Individual) Mission Area Analysis; (2) Initiate integrated NBC Contamination Avoidance Mission Needs Analysis.</li> <li>75 JSIG DT - Continue to support additional joint participation in the Joint Senior Leaders' Course (JSLC).</li> </ul>		
Project DT6	Page 14 of 34 Pages	Exhibit R-2 (PE 0605384BP)

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DT6</b>
<b>FY 2002 Planned Program (Cont):</b> <ul style="list-style-type: none"> <li>1000 JSIG DT - Support Services M&amp;S requirements. Begin development of Common Model Mission Space (CMMS) to characterize the effects and behaviors on operations and personnel. Populate the common data model with existing data and develop missing data. Continue to validate requirements through participation of joint experiments and exercise/war game participation. Verify and document modeling and simulation requirements and tools into C4I systems to optimize Joint CBD operational capability.</li> <li>55 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	3278	
<div> <div>Project DT6</div> <div>Page 15 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div> </div>		



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DT6</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>2277 JSIG DT - Continue to support the development of medical, non-medical and special operations Multi-Service core NBC doctrine: (1) FM 3-11.5 NBC Decontamination; (2) FM 3-11.6 Field Behavior of NBC Agents; (3) FM 4-0.285 Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries. Continue to support the integration of Chemical Biological Defense (CBD) considerations during the revision and development of selected joint doctrinal materials. Continue support to the integration and enhancement of NBC/WMD materials in joint and service professional education. Continue support to the CINCs with NBC/WMD exercise assistance and training. Draft/review Joint Operational Requirements Documents (ORDs): (1) Joint Service General Purpose Mask Milestone (MS) C; (2) Joint Chemical &amp; Biological Agent Water Monitor MS B; (3) Joint Service Mask Leakage Tester MS C; (4) Joint Biological Tactical Detection System MS B; (5) Joint Warning and Reporting Network Block II; (6) Artemis MS B; (7) Joint Effects Model/Joint Ground Effects Model MS B; (8) Joint Operational Effects Federation MS B; (9) Cyanide Pretreatment System (Draft); (10) Joint Biological Agent Identification and Diagnostic System MS B; (11) Smallpox MS BI. Complete assessment of Tularemia stockpile requirements. Initiate Medical NBC Defense Doctrine and Training Assessment.</li> <li>2471 JSIG DT - Continue requirements generation analysis: (1) Initiate Decontamination Mission Area Analysis; (2) Battle Management Mission Area Analysis; (3) Initiate Protection Mission Needs Analysis; (4) Medical Operational Impact Assessment; and (5) Initiate integrated Chemical/Biological Standoff Detection Analysis of Alternatives (if required).</li> <li>75 JSIG DT - Continue to support additional joint participation in the Joint Senior Leaders' Course (JSLC).</li> </ul>		
Project DT6	Page 16 of 34 Pages	Exhibit R-2 (PE 0605384BP)



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>				PROJECT <b>DW6</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
DW6      DUGWAY PROVING GROUND	9732	15315	15651	15156	15442	16922	17164	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project DW6 DUGWAY PROVING GROUND:** Project provides the technical capability for testing Department of Defense (DoD) Chemical and Biological Defense materiel, equipment, and systems from concept through production; to include a fully instrumented outdoor range capability for testing with simulants that can be precisely correlated to the laboratory testing with live agents. It finances indirect test operating costs not billable to test customers, to include indirect civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

DPG, a Major Range and Test Facility Base (MRTFB), is the reliance center for all DoD chemical/biological defense (CBD) testing and provides the United States' only combined range, chamber, toxic chemical lab, and bio-safety level three facility.

DPG uses state-of-the-art chemical and life sciences test facilities and test chambers to perform CBD testing of protective gear, decontamination systems, detectors, and equipment while totally containing chemical agents and biological pathogens. DPG also provides a fully instrumented outdoor range capability for testing with simulants that can be precisely correlated to the laboratory testing with live agents.

Project DW6
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDTE&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DW6</b>
<p>Projects programmed for testing at DPG include: Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD), JSL NBC Reconnaissance System (JSL NBCRS), Joint Service Lightweight Integrated Suit Technology (JSLIST), JSLIST Block One Glove Upgrade (JSLIST JB1GU), Joint Biological Point Detection System (JBPDS), Joint Chemical Agent Detector (JCAD), Joint Service Sensitive Equipment Decontamination (JSSSED), Joint Field Trial Biological Detection VII (JFT VII), and Joint Service General Purpose Mask (JSGPM).</p> <p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>• 7745 DPG - Provided for civilian labor and other supporting costs that could not be directly identified to a specific test customer. These civilian personnel perform administration and staff support for DPG's Chemical/Biological (CB) test mission to include budget, surety operations, range control, COR duties, and environmental oversight. This account provided the sustaining base for this Nation's highest level of expertise in the area of testing chemical and biological defense technologies and equipment.</li> <li>• 1497 DPG - Provided for labor and supporting costs of contractor personnel performing administration and management of DPG's CB test mission contracts. This is the indirect portion of the total cost of providing contractual effort including chemical analysis, field support, planning, and report documentation. This portion of the contract could not be specifically identified to a test customer and was funded by indirect funds; the balance is recouped from customers.</li> <li>• 490 DPG - Provided for a dedicated and specially trained staff to operate and maintain all control systems within DPG's TRIAD Test Complex (Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility).</li> </ul> <p><b>Total</b>            9732</p>		
<div>Project DW6</div> <div>Page 19 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DW6</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>7589 DPG - Provides for civilian labor and other supporting costs that cannot be directly identified to a specific test customer. These civilian personnel perform administration and staff support for DPG's Chemical/Biological (CB) test mission to include budget, surety operations, range control, COR duties, and environmental oversight. This account provides the sustaining base for this Nation's highest level of expertise in the area of testing chemical and biological defense technologies and equipment.</li> <li>2001 DPG - Provides for labor and supporting costs of contractor personnel performing administration and management of DPG's CB test mission contracts. This is the indirect portion of the total cost of providing contractual effort including chemical analysis, field support, planning, and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by indirect funds; the balance is recouped from customers.</li> <li>515 DPG - Provides for a dedicated and specially trained staff to operate and maintain all control systems within DPG's TRIAD Test Complex (Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility).</li> <li>4951 DPG - Provides for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. This includes evolving capability needs driven by change in threat and system requirements and equipment purchases to upgrade/replace aging equipment.</li> <li>259 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	15315	
<div> <div>Project DW6</div> <div>Page 20 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>DW6</b>
<p><b>FY 2003 Planned Program:</b></p> <ul style="list-style-type: none"> <li>• 7964 DPG - Provides for civilian labor and other supporting costs that cannot be directly identified to a specific test customer. These civilian personnel perform administration and staff support for DPG's Chemical/Biological (CB) test mission to include budget, surety operations, range control, COR duties, and environmental oversight. This account provides the sustaining base for this Nation's highest level of expertise in the area of testing chemical and biological defense technologies and equipment.</li> <li>• 2197 DPG - Provides for labor and supporting costs of contractor personnel performing administration and management of DPG's CB test mission contracts. This is the indirect portion of the total cost of providing contractual effort including chemical analysis, field support, planning, and report documentation. This portion of the contract cannot be specifically identified to a test customer and is funded by indirect funds; the balance is recouped from customers.</li> <li>• 540 DPG - Provides for a dedicated and specially trained staff to operate and maintain all control systems within DPG's TRIAD Test Complex (Materiel Test Facility, Combined Chemical Test Facility, and the Life Science Test Facility).</li> <li>• 4950 DPG - Provides for revitalization/modernization efforts at DPG commensurate with technology/facility requirements for future testing. This includes evolving capability needs driven by change in threat and system requirements and equipment purchases to upgrade/replace aging equipment.</li> </ul> <p><b>Total</b>      15651</p>		
<p>Project DW6</p> <p>Page 21 of 34 Pages</p> <p>Exhibit R-2 (PE 0605384BP)</p>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>				PROJECT <b>HS6</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
HS6      HOMELAND SECURITY (MANAGEMENT SUPPORT)	0	0	6000	0	0	0	0	0	6000

**A. Mission Description and Budget Item Justification:**

**Project HS6 HOMELAND SECURITY (MANAGEMENT SUPPORT):** The Homeland Security management program is focused on supporting technology efforts in conducting tradeoff studies, conducting studies exploring technology alternatives, defining Homeland Security requirements, and providing management oversight of the Homeland Security program.

**FY 2001 Accomplishments:** None

**FY 2002 Planned Program:** No planned program

Project HS6
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>HS6</b>
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 700 Joint Mission Area Analysis for Homeland Security biological defense surveillance system.</li> <li>• 600 Doctrine development for Homeland Security surveillance system.</li> <li>• 1000 Interagency program development and integration of a coordinated DoD medical surveillance and detection system.</li> <li>• 1500 Evaluation of civilian applications into overall biological defense surveillance system.</li> <li>• 1200 Component Integration for National Capitol Region (NCR) pilot project and joint service installations.</li> <li>• 1000 Analysis of intelligence community interface for BW Counter-Terrorism Support Center.</li> </ul>		
<b>Total</b>	6000	
<div> <div>Project HS6</div> <div>Page 23 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div> </div>		



<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)				PROJECT <b>MS6</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
MS6 MANAGEMENT SUPPORT	12482	9015	10152	10282	10485	11415	11613	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project MS6 MANAGEMENT SUPPORT:** This project provides management support for the Department of Defense (DoD) Joint Service Nuclear, Biological and Chemical (NBC) defense program. It includes program oversight and integration of overall medical and non-medical programs by the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological (ATSD(NCB)), through the Office of the Deputy Assistant to the Secretary of Defense for Chemical/Biological Defense (DATSD (CBD)); funds execution management by DTRA; integration of joint requirements, training and doctrine by the Joint Service Integration Group (JSIG); Joint Research Development Acquisition (RDA) planning, input to the NBC Defense Annual Report to Congress, and Program Objectives Memorandum (POM) Strategy development by the Joint Service Materiel Group (JSMG); and review of the JSIG and JSMG joint plans and the consolidated NBC Defense POM Strategy by the Joint NBC Defense Board (JNBCDB) Secretariat. It also includes programming support for the Joint Service Chemical Biological Information System (JSCBIS) which serves as a budgetary and informational database for the DoD Chemical/Biological Defense Program. Funding is also provided for the Chemical Biological Archive Information Management System (CBAIMS) a means to collect, assemble, catalog and archive Chemical and Biological Defense information from multiple service locations into a central repository and library.

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>MS6</b>
<b>FY 2001 Accomplishments:</b> <ul style="list-style-type: none"> <li>• 387 CBAIMS - Archived Chemical and Biological information from multiple service locations.</li> <li>• 186 JNBCDB MGT - Provided Joint Nuclear, Biological and Chemical Defense Board (JNBCDB) oversight and analysis for the Planning, Programming, &amp; Budgeting System (PPBS) process.</li> <li>• 2494 JSIG MGT - Developed Joint Requirements and conducted milestone reviews. Conducted annual review and update of Joint Modernization Plan, the integrated medical and non-medical Joint Priority List, the Joint Future Operational Capabilities (JFOCs), and the Annual Report to Congress.</li> <li>• 3006 JSMG MGT - Developed assessments to support Research, Development and Acquisition (RDA) Planning. Provided analytic programmatic support for development of Program Objective Memorandum (POM) Strategy, the Budget Estimate Submit (BES), and the President's Budget (PB) submissions. Responded to specialized evaluation studies throughout the PPBS process. Managed JSCBIS database.</li> <li>• 6409 OSD MGT - Performed program reviews/assessments, provided programmatic PPBS oversight/analysis and congressional issue analysis and support. Supported financial management services provided by the Defense Threat Reduction Agency such as funding distribution and execution reporting.</li> </ul>		
<b>Total</b>	12482	
<div> <div>Project MS6</div> <div>Page 25 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>MS6</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 736 CBAIMS - Archive Chemical and Biological information from multiple service locations.</li> <li>• 187 JNBCDB MGT - Provide Joint Nuclear, Biological and Chemical Defense Board (JNBCDB) oversight and analysis for the PPBS process.</li> <li>• 2614 JSIG MGT - Develop Joint Requirements and conduct milestone reviews. Conduct annual review and update of Joint Modernization Plan, the integrated medical and non-medical Joint Priority List, the JFOCs and the Annual Report to Congress.</li> <li>• 3487 JSMG MGT - Develop assessments to support RDA Planning. Provide analytic programmatic support for development of POM Strategy, the Budget Estimate Submit (BES), and the President's Budget (PB) submissions. Respond to specialized evaluation studies throughout the PPBS process. Provide JSCBIS database management.</li> <li>• 1838 OSD MGT - Perform program reviews/assessments, provide programmatic PPBS oversight/analysis, provide congressional issue analysis and support. Supports financial management services provided by the Defense Threat Reduction Agency such as funding distribution and execution reporting.</li> <li>• 153 SBIR - Small Business Innovative Research.</li> </ul>		
<b>Total</b>	9015	
<div> <div>Project MS6</div> <div>Page 26 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RD&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT) PROJECT MS6	
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 344 CBAIMS - Archive Chemical and Biological information from multiple service locations.</li> <li>• 191 JNBCDB MGT - Provide Joint Nuclear, Biological and Chemical Defense Board (JNBCDB) oversight and analysis for the PPBS process.</li> <li>• 2673 JSIG MGT - Develop Joint Requirements and conduct milestone reviews. Conduct annual review and update of Joint Modernization Plan, the integrated medical and non-medical Joint Priority List, the JFOCs and the Annual Report to Congress.</li> <li>• 4649 JSMG MGT - Develop assessments to support RDA Planning. Provide analytic programmatic support for development of POM Strategy, the Budget Estimate Submit (BES), and the President's Budget (PB) submissions. Respond to specialized evaluation studies throughout the PPBS process. Provide management of JSCBIS.</li> <li>• 2295 OSD MGT - Perform program reviews/assessments, provide programmatic PPBS oversight/analysis, provide congressional issue analysis and support. Supports financial management services provided by the Defense Threat Reduction Agency such as funding distribution and execution reporting.</li> </ul>		
<b>Total</b>	10152	
<div> <div>Project MS6</div> <div>Page 27 of 34 Pages</div> <div>Exhibit R-2 (PE 0605384BP)</div> </div>		

<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>							DATE <b>February 2002</b>		
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>				PROJECT <b>O49</b>	
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
O49 JOINT POINT TEST	1471	2987	2998	2990	2987	2998	2994	Continuing	Continuing

**A. Mission Description and Budget Item Justification:**

**Project O49 JOINT POINT TEST:** The objectives of the Joint Point Test program are to plan, conduct, evaluate, and report on joint tests (for other than developmental hardware) and accomplish operational research assessments in response to requirements received from the Commanders in Chief (CINCs) and the Services. This program will provide ongoing input to the CINCs and Services for development of doctrine, policy, training procedures, and feedback into the Research, Development, Testing & Evaluation (RDT&E) cycle.

**FY 2001 Accomplishments:**

- 280 Conducted assessments evaluating performance and procedures in a chemical environment. Assessments included decontamination of strategic and tactical aircraft and preparation of an anthrax source book.
- 503 Conducted field trials evaluating performance and procedures in a chemical environment. Field trials included effectiveness of operations and contamination avoidance using cargo covers.
- 688 Conducted laboratory tests evaluating performance and procedures in a chemical environment. Laboratory tests were performed on the fate of chemical agents.

**Total**            1471

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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	<b>0605384BP CHEMICAL/BIOLOGICAL DEFENSE (MANAGEMENT SUPPORT)</b>	PROJECT <b>O49</b>
<b>FY 2002 Planned Program:</b> <ul style="list-style-type: none"> <li>• 1436 Conduct assessments evaluating performance and procedures in a chemical environment. Conduct assessment on casualty decontamination procedures.</li> <li>• 1500 Conduct field trials evaluating performance and procedures in a chemical environment. Conduct casualty decontamination procedures, contamination control and toxic free area operations, and cargo aircraft contamination control in field trials.</li> <li>• 51 SBIR - Small Business Innovative Research.</li> </ul> <b>Total</b> 2987		
<b>FY 2003 Planned Program:</b> <ul style="list-style-type: none"> <li>• 1406 Conduct field trials evaluating performance and procedures in a chemical environment. Field trials to be conducted are in support of operations: (1) determination of chemical droplet size, and (2) processing cargo and troops through an exchange zone.</li> <li>• 571 Conduct laboratory tests evaluating performance and procedures in a chemical environment. Conduct laboratory tests to address the effects of rotor wash on aircrew ensemble.</li> <li>• 721 Conduct assessments evaluating performance and procedures in a chemical environment. Conduct assessments of the effectiveness of interior building areas for use as chemical rest and relief areas.</li> <li>• 150 Conduct CB Joint Technical Information Center Research. Conduct the following as necessary: Initial Evaluation, Literature Search, or a letter response with the results of the evaluation. Conduct as necessary. further assessment to determine if modeling, a field test, a laboratory test, and/or a chamber test is merited.</li> </ul>		
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**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - Management Support****0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)**

COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	6630	0	0	0	0	0	0	0	6630
SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6630	0	0	0	0	0	0	0	6630

**A. Mission Description and Budget Item Justification:** The overall objective of the Chemical/Biological Defense (CBD) SBIR program is to improve the transition or transfer of innovative CBD technologies between Department of Defense (DoD) components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.



**CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)**

DATE

**February 2002**

BUDGET ACTIVITY

**RDT&E DEFENSE-WIDE/  
BA6 - Management Support****0605502BP SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)****B. Program Change Summary:**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Previous President's Budget (FY 2002 PB)	0	0	0
Appropriated Value	0	0	0
Adjustments to Appropriated Value	0	0	0
a. Congressional General Reductions	0	10485944	0
b. SBIR/STTR	6630	0	0
c. Omnibus or Other Above Threshold Reductions	0	0	0
d. Below Threshold Reprogramming	0	0	0
e. Rescissions	0	0	0
Adjustments to Budget Years Since FY 2002 PB	0	0	0
Current Budget Submission (FY 2003 PB)	6630	0	0

**Change Summary Explanation:****Funding:****Schedule:****Technical:****C. Other Program Funding Summary:** See section B in the R2A's

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BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>				PROJECT <b>0605502BP SMALL BUSINESS INNOVATIVE RESEARCH SB6 (SBIR)</b>					
COST (In Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
SB6      SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	6630	0	0	0	0	0	0	0	6630

**A. Mission Description and Budget Item Justification:**

**Project SB6 SMALL BUSINESS INNOVATIVE RESEARCH (SBIR):** The SBIR Program is a Congressionally mandated program established to increase the participation of small business in federal research and development (R&D). Currently, each participating government agency must reserve 2.5% of its extramural R&D for SBIR awards to competing small businesses. The goal of the SBIR Program is to invest in the innovative capabilities of the small business community to help meet government R&D objectives while allowing small companies to develop technologies and products which they can then commercialize through sales back to the government or in the private sector.

The Department of Defense (DoD) has consolidated management and oversight of the Chemical and Biological Defense (CBD) program into a single office within the Office of the Secretary of Defense (OSD). The Army was designated as the Executive Agent for coordination and integration of the CBD program. The executive agent for the SBIR portion of the program is the Army Research Office-Washington.

The overall objective of the CBD SBIR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.

Project SB6
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<b>CBDP BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
BUDGET ACTIVITY <b>RDT&amp;E DEFENSE-WIDE/ BA6 - Management Support</b>	PROJECT <b>0605502BP SMALL BUSINESS INNOVATIVE RESEARCH SB6 (SBIR)</b>	
<p><b>FY 2001 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>6630 Conducted Chemical and Biological Defense SBIR research and development efforts.</li> </ul> <p><b>Total</b>      6630</p> <p><b>FY 2002 Planned Program: No planned program</b></p> <p><b>FY 2003 Planned Program: No planned program</b></p>		
<p>Project SB6</p> <p>Page 34 of 34 Pages</p> <p>Exhibit R-2 (PE 0605502BP)</p>		